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DEFENSE DEPARTMENT AUTHORIZATION AND OVERSIGHT

HEARINGS

ON

H.R. 4428

DEPARTMENT OF DEFENSE AUTHORIZATION OF APPROPRIATIONS FOR FISCAL YEAR 1987

AND

OVERSIGHT OF PREVIOUSLY AUTHORIZED PROGRAMS

BEFORE THE

COMMITTEE ON ARMED SERVICES
HOUSE OF REPRESENTATIVES
NINETY-NINTH CONGRESS
SECOND SESSION

SEAPOWER AND STRATEGIC AND CRITICAL MATERIALS SUBCOMMITTEE

TITLE I

HEARINGS HELD
FEBRUARY 19, 20, 24, 25, 28; MARCH 12, AND JUNE 10, 1986

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99TH CONGRESS
2D SESSION

H. R. 4428

To authorize appropriations for fiscal year 1987 for the Armed Forces, for procurement, for research, development, test, and evaluation, for operation and maintenance, and for working capital funds, to prescribe personnel strengths for such fiscal year for the Armed Forces, and for other purposes.

IN THE HOUSE OF REPRESENTATIVES

MARCH 18, 1986

Mr. ASPIN (for himself and Mr. DICKINSON) (by request) introduced the following bill; which was referred to the Committee on Armed Services

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A BILL

To authorize appropriations for fiscal year 1987 for the Armed Forces for procurement, for research, development, test, and evaluation, for operation and maintenance, and for working capital funds, to prescribe personnel strengths for such fiscal year for the Armed Forces, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That this Act may be cited as the "Department of Defense Authorization Act, 1987".

TITLE I—PROCUREMENT

AUTHORIZATION OF APPROPRIATIONS, ARMY

SEC. 101. Funds are hereby authorized to be appropriated for fiscal year 1987 for procurement of aircraft, missiles, weapons, and tracked combat vehicles, and ammunition and for other procurement for the Army as follows:

For aircraft, $3,264,700,000.

For missiles, $2,438,200,000.

For weapons and tracked combat vehicles, $4,452,600,000.

For ammunition, $2,254,000,000.

For other procurement, $6,169,000,000.

AUTHORIZATION OF APPROPRIATIONS, NAVY AND MARINE CORPS

SEC. 102. (a) Funds are hereby authorized to be appropriated for fiscal year 1987 for procurement of aircraft, weapons (including missiles and torpedoes), shipbuilding and conversion, and other procurement for the Navy as follows:

For aircraft, $11,304,300,000.

For weapons (including missiles and torpedoes), $6,095,400,000.

For shipbuilding and conversion, $11,046,200,000.

For other procurement, $6,538,800,000.

(b) Funds are hereby authorized to be appropriated for fiscal year 1987 for procurement for the Marine Corps (including missiles, tracked combat vehicles, and other weapons) in the amount of $1,565,000,000.

AUTHORIZATION OF APPROPRIATIONS, AIR FORCE

SEC. 103. Funds are hereby authorized to be appropriated for fiscal year 1987 for procurement of aircraft and missiles and for other procurement for the Air Force as follows:

For aircraft, $19,127,400,000.

For missiles, $8,982,400,000.

For other procurement, $10,900,300,000.

AUTHORIZATION OF APPROPRIATIONS, DEFENSE AGENCIES

SEC. 104. Funds are hereby authorized to be appropriated for fiscal year 1987 for the Defense Agencies in the amount of $1,488,400,000.

AUTHORIZATION OF APPROPRIATIONS FOR CHEMICAL DEMILITARIZATION

SEC. 105. Funds are hereby authorized to be appropriated for fiscal year 1987 for the purposes of the destruction of lethal chemical weapons in accordance with section 1412 of the Department of Defense Authorization Act, 1986, in the amount of $120,100,000.

CERTAIN AUTHORITY PROVIDED THE SECRETARY OF DEFENSE IN CONNECTION WITH THE NATO AIRBORNE WARNING AND CONTROL SYSTEM (AWACS) PROGRAM

SEC. 106. Effective on October 1, 1986, section 103(a) of the Department of Defense Authorization Act, 1982

(Public Law 97-86; 95 Stat. 1100) is amended by striking out "fiscal year 1986" both places it appears and inserting in lieu thereof "fiscal year 1987".

* * * * * * *

H.R. 4428, DEPARTMENT OF DEFENSE AUTHORIZATION FOR APPROPRIATIONS FOR FISCAL YEAR 1987—TITLE I

House of Representatives,
Committee on Armed Services,
Seapower and Strategic and
Critical Materials Subcommittee,
Washington, DC, Wednesday, February 19, 1986.

SHIPBUILDING AND CONVERSION, NAVY

The subcommittee met, pursuant to call, at 9:30 a.m., in room 2216, Rayburn House Office Building, Hon. Charles E. Bennett (chairman of the subcommittee) presiding.

OPENING STATEMENT OF HON. CHARLES E. BENNETT, A REPRESENTATIVE FROM FLORIDA, CHAIRMAN, SEAPOWER AND STRATEGIC AND CRITICAL MATERIALS SUBCOMMITTEE

Mr. **Bennett**. The hearing will come to order. Today the Seapower Subcommittee begins its hearings on the Department of Defense authorization for fiscal year 1987. Because of the requirement to report a committee bill before the Easter recess, the subcommittee has set out an ambitious hearing schedule for the next few weeks, concluding with our subcommittee markup scheduled on March 11.

The hearing today will address the Navy's fiscal year 1987 shipbuilding request, focusing specifically on the surface ship portion. Tomorrow the subcommittee will devote a full day of hearings to submarine programs. In the next 2 weeks the subcommittee will take up the weapons and other procurement portions of the Navy request; hold hearings on the strategic stockpile and mariner fund authorization legislation—perhaps even bring out a special bill on the latter; examine Navy ship repair policies in a joint hearing with the Readiness Subcommittee; and receive briefings on Navy research and development and antisubmarine warfare efforts. Our hearings will conclude with a wrapup session with the Secretary of the Navy, Chief of Naval Operations, and Commandant of the Marine Corps.

Before turning specifically to the shipbuilding request, I would like to say a few words about the task before us. Passage of the Gramm-Rudman-Hollings balanced budget legislation no doubt will make our job a very challenging and stimulating one this year. Some people have spoken of the inevitability of cutting large amounts from defense this year, on the order of $60 billion. While I personally do not believe that such cuts would be prudent and in keeping with our responsibility to provide for the national defense, the subcommittee must be prepared to evaluate the effect of lower budgets.

To that end, all of our witnesses this year should be prepared to discuss ways in which the Navy's request might be reduced with the least harm to national security, should the need arise; because there is a real strong possibility that somehow or other we will make all this fit together, and we hope it can be done in some way that won't be hurtful for national defense.

Among the major issues that we will explore in these hearings are:

Whether the 14 new start programs included in the authorization request really need to begin this year and in fact are ready to begin;

What actions are being taken by the Navy to correct problems in the mine countermeasure ships and landing craft air cushion program; and

Whether actions to develop second-source manufacturers and multiyear procurement initiatives make sense in light of the uncertainty introduced about future defense cuts by the Gramm-Rudman-Hollings bill.

The subcommittee will also seek information on whether fiscal year 1986 programs can be executed in light of the Gramm-Rudman-Hollings reductions.

The shipbuilding request before us today seeks 21 new ships and 3 conversions at a cost of just over $11 billion. Included are three new *Arleigh Burke*-class destroyers, the first of a new class of fast combat support ships, and the initial dollar request for long lead time components for the *Seawolf,* or the SSN-21. Conspicuously absent this year are requests for more mine countermeasure ships, air cushion landing craft, and service life extension of the *Kitty Hawk*.

Mr. Spence, do you wish to make a statement?

STATEMENT OF HON. FLOYD SPENCE, A REPRESENTATIVE FROM SOUTH CAROLINA, RANKING MINORITY MEMBER, SEAPOWER AND STRATEGIC AND CRITICAL MATERIALS SUBCOMMITTEE

Mr. **Spence.** Thank you, Mr. Chairman.

Our work this year on the Navy's authorization request must balance the need for continuing modernization and expansion of our Navy with the fiscal realities of Gramm-Rudman. Given the years of neglect that our Navy suffered in the past, I hope and trust we can find a way to continue the course of improvement we set 5 years ago.

In light of other growth in the President's defense request, the shipbuilding account is well within reason. It is smaller in real terms than the shipbuilding budgets for the last 5 years. In fact, this year's shipbuilding request would take the smallest percentage of either Navy or Department of Defense obligational authority than any request since 1980.

The request contains the important elements that this committee has strongly supported in past years: Attack submarines, modern surface combatants, service force improvements and strategic sealift expansion. It appears to be a reasonable and balanced effort towards sustaining the 600-ship Navy our country has already purchased.

I trust that our Navy witnesses will continue to work with the subcommittee this year in carrying out its duties, and I look forward to working with the chairman toward bringing out a reasonable, responsible bill.

Mr. BENNETT. Our witnesses today are Assistant Secretary of the Navy Pyatt, Vice Adm. Metcalf and Vice Adm. Rowden, who relieved Admiral Fowler as head of the Naval Sea Systems Command.

Secretary Pyatt, you may proceed.

STATEMENT OF HON. EVERETT PYATT, ASSISTANT SECRETARY FOR SHIPBUILDING AND LOGISTICS, DEPARTMENT OF THE NAVY

Mr. PYATT. Sir, I would like to provide my testimony for the record and briefly summarize it; because I know the main issue this morning is the series of questions that you raised.

Mr. BENNETT. Without objection that will be done, and also for the two admirals if they want to do the same thing.

Mr. PYATT. I would like to just reiterate a point that Mr. Spence made; and that is that the ships in the budget are a decreasing fraction of the defense budget. Having fallen from 4.3 percent in fiscal year 1981 to 3.5 percent in fiscal year 1987.

Part of the reason for this fall is that we have been able to enter the competitive market very aggressively; the shipbuilders have responded in a very professional manner and ship prices have fallen. For these reasons, we believe that the 600-ship Navy is clearly affordable.

One of the results of these activities has been a savings of $4.4 billion over the years of 1983, 1984 and 1985, from the President's request from the shipbuilding account. Some of these savings have occurred in funds not appropriated; others have been transferred to other programs including $750 million, which went to the MX. So, this situation leaves us satisfied that we are proceeding with the proper business strategy and acquisition strategy, and that the acquisition improvements that we've outlined—that the Secretary of the Navy has outlined in appearances here—are in fact taking hold and producing the kinds of results we believe should be occurring.

I would also like to mention something about what is going on in the U.S. shipbuilding industry. The industry has responded to the competitive environment with efficiency improvements. They have taken ideas from the Japanese and put them in their yards here, increasing the ability to pre-outfit larger modules and improve efficiency. I continue to believe that country is more efficient in building combatant ships than the United States.

I would like to just take an aside here to thank many of the members of this committee for their assistance during the last year when we got into a discussion of SRA, selected restricted availability, policy. I know it was carried on on the floor of both Chambers, and we always found a very open and receptive ear to the problems that we were having.

The way it came out, I believe, is very beneficial to the families of the people who have to operate these ships and take care of them, and the new policy provides access to the training centers that we have. I would like to express my appreciation for your assistance.

One part of our acquisition improvements that I haven't discussed before this committee is just taking form. There is really an attempt to take a stab at the specification bureaucracy that exists within the Defense Department, within shipbuilding. Last year I mentioned that we were about to establish an individual responsible for looking over specifications, for challenging them and institutionalize that within the Navy. That is now complete; the process is ongoing, and we discovered some interesting things along the way.

One of the most shocking to me was that we have a specification for chair glides to use on Navy ships that specifies the radius of curvature of the chair glide to the thousandth of an inch. Why? I don't know, but it is clearly something we need to challenge. There are a whole series of these, and I think that every once in a while you need to sit down and take a look at your operations, decide maybe this is a fruitful area to challenge; and that's what we're doing.

In the shipbuilding area, we're now trying a more cooperative venture between the Navy and the shipyards in designing ships. We know what we need; industry knows a lot about how to provide it—efficient ways to provide it—and a lot of changes have occurred.

Examples of early industry involvement have occurred in the DDG–51 where representatives from all the potential shipbuilders gathered with Navy, and we worked out outlines of a design. It proved very successful. The AOE–6 process is substantially similar, and the introduction of the Swath technology in the United States in the TAGOS configuration is proceeding along the same line.

In some classes of ships, it's possible to simply say, "Here is the performance that we require. Use commercial specifications and build it for us." That's the way that all the TAKX ships were procured in the build and charter program. It's also the way that the survey ships were built. All these have resulted in substantial savings.

The fiscal year 1987 SCN Program is portrayed in the data that you have. I won't go over it. The issue that is before us now is the implementation of the Gramm-Rudman-Hollings Act, and we spent considerable time trying to understand exactly what it means to us in terms of line by line. We are in a situation where we have to look at it line by line, and find ourselves in some very confusing situations.

One as an example: In shipbuilding contracts, because they run over a substantial period of time and the exact amount of escalation that may occur over that time is impossible to predict, we write in an escalation clause that is computed based on the Bureau of Labor Statistics formula. We don't obligate that money until escalation actually occurs on either a monthly or quarterly basis. Therefore, we carry very large unobligated balances that we are contractually required to pay but are carried in the unobligated balance column. Therefore, when you take a cut against unobligated SCN balances, it makes a cut against contractually binding obligations. It's crazy.

I hope that we in the Navy will proceed to obligate that money very quickly, because the price of not obligating it means future cuts, and we will undoubtedly have to come back to get money to live up to our contractual obligations.

Mr. BENNETT. Might an amendment to do what you suggest to the Gramm-Rudman bill, assuming it was conceivable, not upset that bill too much and at the same time help you?

Mr. PYATT. Amendment is a possibility. Obligating the money when we get it is a possibility; that is the easy way to solve it. In the past, we've chosen not to do that.

Mr. BENNETT. I urge you to do it in the way in which you can do it, under the law, but if there is some way you need an amendment, you might let us know; we might pass that.

Mr. PYATT. Yes, sir.

Another series of events is occurring that is contrary to normal business practice. Normal business practice would say that you would buy Government-furnished equipment for installation on the ship such that it was available just in time for the shipyard to install it.

Now we find in that sometimes the GFE would be purchased a year or two after the contract for the ship itself was awarded; and the funds for that are carried in unobligated balances. Now we find ourselves, because of the emphasis and focus on unobligated balances considering, against good business judgment, buying this equipment earlier. Therefore the obligations, expenditures, will occur before they would normally occur. If we don't, we won't have money to buy the equipment, possibly, and this is the dilemma we find ourselves in in executing very long duration programs such as shipbuilding. We don't see it anyplace else in any other procurement account; it's special in the shipbuilding account.

Mr. SISISKY. Excuse me. Does that mean if you've got a ship that's going to be under construction for 4 years, you might buy a nuclear reactor today?

Mr. PYATT. Well, the nuclear reactor is always bought before the ship. Let's talk about a ship's radar. A ship being under construction 4 years, we may buy the radar halfway through that period; say 2 years into it, for delivery in the fourth year, and in installation. Now we would find ourselves, because of the emphasis on unobligated funds, buying the radar in the first year, when we have the money; storing it for 2 years, and then installing it. While it's in storage, we've got to take care of it and there's a possibility of damage.

Mr. SISISKY. Not counting the interest on it.

Mr. PYATT. And the interest on the money because the Government will have to borrow the money to pay the bill or fraction of it, and so it doesn't make sense, but it's one of the things that we see ourselves thinking about, looking out for, and executing under these rules.

I would like to bring up one other issue not related to the 1987 program, but related to the 1986 program. It is the dilemma I find myself in in trying to come to grips with the appropriated, unauthorized problems. Let me describe just one: Battleship.

Last year, during the authorization process, the law clearly stated that if the Navy finds savings to fully fund the battleship, it may transfer those savings under existing rules. That's fine. That gave us a challenge to go out—we wanted the battleship, you recognized it. That gave us a challenge to go out and scrape the bushes and pull it together. We did. We had the money. But then in the appropriation process, it came out that for reasons that I don't fully comprehend, it was more desirable to appropriate new money for the battleship and take the money that we had pulled together in savings and put them in a reserve for readiness and pay raises. That's fine.

However, we now find ourselves in a situation of having twice as much money as we need to do the battleship, and we can't do it either way. Sir, I'd like to work with the committee to find a way out.

Another problem that we have is the mine countermeasures ship, and this is the kind of thing that happens as programs evolve and authorization process occurs before the appropriations process, and we learn as we go through the year. Simply, the major issue in the mine countermeasures ship is that both contractors had a cost overrun that was contractually covered and we are bound to pay.

During the year we discovered that, estimated its magnitude, and the appropriation process included that. I would also like to say that one of the members of this committee who is not here takes great pleasure in beating us up about our lack of interest in mine countermeasures ships, and he's right. We'd like to somehow figure out a way to resolve that issue. We are going to have to do some internal juggling and borrowing to pay for that, but that can only last so long.

It is always a pleasure working with this committee, and we look forward to it during the year, and I believe Admiral Metcalf now has a presentation to make about the specific ships that we are asking for.

PREPARED STATEMENT OF HON. EVERETT PYATT

Mr. Chairman and distinguished members of the committee. I am Everett Pyatt, Assistant Secretary of the Navy (Shipbuilding and Logistics).

I am pleased to appear before this committee to discuss the Navy Shipbuilding and Conversion Program, our progress in constructing the 600-ship Navy, and the President's Budget Request for Fiscal Year 1987. Ships are becoming a decreasing portion of the defense budget, having fallen from 4.3% in FY 81 to 3.5% in FY 87. Clearly, a 600-ship Navy is affordable.

The 600-ship Navy, with the 15 carriers called for by our Maritime Strategy, will be in place by the end of this decade. The fleet will have increased from 479 battle force ships in 1979 to 553 by the end of this year. This level will be achieved with funds already authorized and appropriated. As of 1 February 1986, there were 84 naval ships under construction, conversion, or reactivation at 17 different U.S. shipyards.

Concurrent with increasing the size of the Navy, we have significantly reduced acquisition costs. By improving our acquisition management, we have saved the taxpayers billions of dollars. The FY 1983, 1984, and 1985 shipbuilding programs are a total of $4.4 billion under the President's Budget Requests.

In my appearance before this committee last year, I described the major elements of our acquisition strategy; design and cost stability, competition, and increased emphasis on developing acquisition professionals. These precepts now permeate daily decisionmaking throughout the Navy's acquisition community. Today, I want to go further and discuss our acquisition policy, the results of competition, our achievements in acquisition streamlining, and highlight the major programs in our Fiscal Year 1987 request.

Acquisition Improvement

I would like to make special note of the steps taken by the private shipyards of the United States to improve their capabilities to respond to the Navy's needs. Their cooperation and assistance has been instrumental in achieving our acquisition goals. In addition, the private yards have taken steps of their own, including capital investment, to improve productivity and reduce costs.

Ships are now constructed of larger, more fully completed modules, resulting in faster, less expensive construction. New and improved facilities have improved yard efficiency and productivity and have reduced construction times. The private yards have learned from their strongest competitors, the Japanese yards, new and better production and production planning techniques.

All these efforts by the private yards are evidence that the U.S. shipbuilding industry wants to improve its product and reduce the costs. We are most pleased by these developments and look forward to continuing a working relationship that is beneficial to both Navy and the industry.

In another area of procurement policy, I want to thank you for your assistance in helping to preserve our practice of restricting bidding on Selected Restricted Availabilities (SRA) to homeport areas. By retaining SRA's of less than six months' duration in a ship's homeport, we will continue to have the benefits of better family life for our shipboard personnel, better logistic support, and better access to needed training centers. I believe our initiatives to open overhauls to coastwide bidding and bid more ships in competition between the public and private sector addresses the Congressional concerns for maintaining an adequate industrial base.

I might add that, in the general area of ship maintenance, we have been able to reduce the amount of "growth" work in our maintenance availabilities; that is, we have been able to minimize the impact of "low-ball" bidding. Increased management attention will help us do even better in the future.

Our military emphasis is changing from force building to force modernization, readiness, and sustainability. Our primary business mission is to achieve our force level, modernization, readiness, and sustainability goals at reduced cost. We believe our acquisition policies will achieve that end.

Competition

Competition is the cornerstone of our acquisition strategy. It has reduced our acquisition costs and it will continue to reduce costs.

In FY 1980, about 15 percent of Navy ship construction and conversion dollers were competitively awarded. In FY 1985, that percentage increased to over 86 percent. In FY 1986 and beyond, we intend to compete all of our ship construction and conversion, with eventual inclusion of the TRIDENT submarine.

Competition continues to work to save the taxpayers money. The FY 1983-FY 1985 shipbuilding programs are currently $4.4B under the President's budget.

Acquisition Streamlining

I reported to this committee at this time last year that the Secretary of the Navy had appointed an individual to oversee our initiatives to reduce or cancel technical and acquisition specifications for systems that have been over-specified. I am pleased to report that major strides have been taken during this first year.

The acquisition streamlining objective is to identify, develop, and implement improvements in all aspects of acquisition that will result in a reduction of the time and cost required to obtain quality weapon systems, facilities, and equipment.

Our initial thrust has been to streamline contract requirements. In particular, we have been taking a hard look at our specification base which includes approximately 15,000 documents. We want to ensure that only up-to-date, technically correct and cost-effective specifications are included in our contracts. For example, we have launched attacks on the specification used for ship construction to identify non-cost-effective requirements. We are progressing well into the areas of heating, ventilation, air conditioning, habitability and compressed air systems and will continue until all areas have been thoroughly reviewed and cost-reducing change implemented.

We have instituted policy to avoid premature application of specifications and standards. Prior to full-scale development, all specifications and standards are cited for guidance only. We are specifying system level requirements in terms of mission performance instead of the "how-to" specifications or standards. During full-scale development, we have limited automatic chain referencing of specifications. Ultimately, this process will result in production contracts that have been rigorously scrubbed of any unnecessary specifications or "gold-plated" requirements, while permitting industry flexibility to propose innovative, cost avoiding alternatives. By involving industry early in our design process, we are avoiding downstream production problems which can result in cost growth. Examples of this early industry involvement are the DDG-51 Guided Missile Destroyer and the AOE-6 Fast Combat Support Ship. In the case of DDG-51, the design is a product of early industry involvement to prove its producibility. The AOE-6 design process has included five separate design reviews with active participation by shipbuilders and designers. All shipbuilding programs currently under development will receive this special emphasis on streamlining. This includes our more sophisticated combatants such as the SSN-21 submarine program.

Where appropriate, we are using performance specifications for production contracts. An example of this is the contract for two T-AGS Ocean Survey ships awarded last year to Bethlehem Steel. We used a Circular of Requirements to procure these ships - in effect, a performance spec - which resulted in a very competitive award and significant savings to the Government.

We know our success in achieving a combat-ready 600-ship Navy, in the face of budget realities confronting our nation, makes initiatives such as streamlining imperative. The next step in cost reduction will come from this effort.

FY 1987 SCN Program

Now I would like to discuss some highlights of the 1987 Shipbuilding and Conversion Program. The FY 1987 Navy budget includes funding for acquisition of 21 new ships and the conversion of three. The majority of this construction and conversion is for replacement and modernization rather than force expansion. Prior year programs provided the bulk of funding for establishment of the 600-ship Navy which will soon be a deployed reality. Our programs are now designed to assure that the 600-ship Navy will continue to consist of the most capable and modern ships carefully aligned to meet our worldwide commitments.

The FY 1987 program includes funds for the fourteenth TRIDENT submarine, four LOS ANGELES (SSN-688) class nuclear attack submarines, two TICONDEROGA (CG-47) class cruisers, three Arleigh Burke (DDG-51) class destroyers, four coastal minehunters, two fleet oilers, three TAGOS support ships, one fast combat support ship (AOE), and one oceanographic ship (AGX). Advance funding is requested for the new attack submarine (SSN-21) planned for FY 1989. Funds are also included for conversion of two T-ACS auxiliary crane ships and the jumbo conversion of one oiler (AO).

Balanced Budget and Emergency Deficit Control Act of 1985

The FY 1986 appropriation levels for the Department of Defense were well below the President's request and left no room for additional reduction. We are now facing the Gramm/Rudman/Hollings deficit reductions. We must further improve the way we do business to help prevent further budget cuts from devastating our defense posture.

I wish to note that the Gramm/Rudman/Hollings reductions are causing problems, not all of which are well defined. In programs with small unit buys and long-term outlays such as shipbuilding, successive annual applications of Gramm/Rudman/Hollings will leave us short of the funds required to complete the final units. This is probably true for most of the ships under construction now, because unobligated balances necessary to complete the ship, under the full funding policy, are being cut. Although it is early in the year, the FY '86 and prior year SCN programs may be about a half billion dollars in the red as a result of this legislation. This is after we remove all program management reserves and escalation savings. The problem would be eased if we had greater flexibility to move funds between the individual shipbuilding program accounts and across fiscal years. Furthermore, the cuts make it highly important that shipbuilders meet the target prices they contract for, because there are no funds beyond that level.

Mr. Chairman, that concludes my statement. VADM Joseph Metcalf, Deputy Chief of Naval Operations (Surface Warfare), and VADM William Rowden, Commander, Naval Sea Systems Command, are with me today to provide further details of the shipbuilding program.

Mr. BENNETT. Admiral Metcalf.

STATEMENT OF VICE ADM. JOSEPH METCALF, DEPUTY CHIEF OF NAVAL OPERATIONS FOR SURFACE WARFARE, DEPARTMENT OF THE NAVY

Admiral METCALF. Mr. Chairman, distinguished members of the committee, I have a brief overview which will take about 5 minutes, and we'll get on with it.

The shipbuilding program is put together within the constraints of the dollars involved, and in consideration of the maritime strategy. If any of the Members have not had a brief of the maritime strategy, I am sure we can arrange that for you. With your support, our fleet has grown from 491 ships in 1981 to 542 today, and this slide shows that ship count. (See pg. 16.) We will reach the 600-ship level in 1989.

The 5-year shipbuilding program contains a total of 106 new construction ships and 21 conversions. It is a balanced mix of combat and support forces, and it is carefully put together recognizing the demands of the maritime strategy and to produce a 600-ship Navy which meets the requirements. It is a prudent risk force.

Looking specifically at the fiscal year 1987 SCN program, it represents 10.8 percent of the Navy's total TOA, and reflects negative real growth for the second straight year. This year we are requesting $11.04 billion for the construction of 21 new ships and the conversion of 3 others. These ships have roles across the entire spectrum of conflict from peacetime presence to global war. I will briefly go through each one of the major elements of this program. This is an *Ohio*-class submarine; it will carry the Trident II D-5 missile.

The nuclear attack submarine SSN-688, the *Los Angeles* class. There is funding for four more of these in the program. These particular ships will have the vertical launch system [VLS] for Tomahawk as well as improved cost ability to operate in the Arctic. They are quieter and have more capable weapons systems.

The SSN-21 nuclear attack submarine is a new class of submarine. It has been named the *Seawolf*. It will be quieter, faster, more heavily armed then our present submarines, and represents a quantum improvement over what we have been able to build in the past.

The aircraft carrier SLEP [Service Life Extension Program. During the budget formulation last spring, we moved the start of the U.S.S. *Kitty Hawk* [CV-63] Service Life Extension Program from fiscal year 1987 to fiscal year 1988. This year we are requesting long-lead material to support the fiscal year 1988 start.

The CG-47, the *Ticonderoga* class *Aegis* cruisers. Of course we all remember what the *Ticonderoga* did a year after she was commissioned. She was off Beirut—this ship represents a revolution in the Navy's contribution to our offensive capabilities. We have two CG-47's in the program.

DDG-51, the *Arleigh Burke* class guided missile destroyer replaces two aging classes; the DDG-2 and the DDG-37 classes which are nearing the end of their service lives. It is probably the most powerful destroyer that was ever built, with the *Aegis* combat system, Tomahawk, vertical launch system standard missile [SM-2] as well as Gun and ASW systems. Funds for 3 DDG-51's and advanced procurement for 3 fiscal year 1988 ships are included in the program.

The amphibious assault ship LHD-1 *Wasp* class. The LHD-1 class assault ships are required to achieve our goal of amphibious lift for the assault echelons of a marine amphibious force and a marine amphibious brigade by 1996. These are unique ships in that they can be used to operate vertical short takeoff [V/STOL] aircraft as in secondary sea control and power projection missions as well as amphibious roles. The budget includes advance procurement for LHD-3 and -4.

The *Austin* [LPD-4] class amphibious transport docks. We're planning to commence a service life extension of the LPD-4 class in fiscal year 1989. This will modernize the engineering plants and extend these ships' service life from 35 to 45 years. The budget includes advance procurement funds for the lead ship.

The *Cardinal* [MSH-1] class minesweeper. The lead ship was appropriated in fiscal year 1984 and four followon ships were funded last year. The fiscal year 1987 budget includes four more MSH's.

The fast combat support ship, AOE-6 class. The budget includes funding for the first of this class of new fast combat support ships, the AOE-6 class. We plan to build a total of 4 of these ships, bringing our overall force of multiproduct ships to 15, one for each carrier battle group. Our estimate of the cost of the lead ship of this class has decreased from $815 million in our fiscal year 1985 request to $612.7 in fiscal year 1987.

The fleet oiler, TAO-187 class. These are the oilers which are designed to carry fuel from advanced logistics bases, or consolidation points to the battle groups. There are two TAO's in the budget.

The fleet oiler [AO-177] Jumboization Program. The jumboization of this class of oilers will commence this year.

Ocean surveillance ship, the TAGOS. A total of 26 TAGOS ocean surveillance ships; 18 monohulls and 8 small water plane twin-hull ships, or SWATH, are planned. Funds for the last three TAGOS monohulls are in the budget request.

The AGOR-23, oceanographic research ship. In order to enhance the Navy's contributions to oceanographic research, we are planning to procure several new oceanographic research ships. The budget includes funds for the AGOR-23.

Auxiliary crane ships, or TACS. There are two auxiliary crane ships in the budget. The purpose of these ships is to offload containerized and outside cargo from ships offshore or in undeveloped or damaged ports.

This is the craft line. The request includes funding for one torpedo tester, three floating cranes, two fuel barges, and two oil storage barges. The request also includes funds to continue the Surface Warfare Craft Medium Program.

Other shipbuilding. The fiscal year 1987 budget includes funds for our sealift programs, outfitting, postdelivery, and ship contract design.

Mr. Chairman, this concludes my overview of the 1987 SCN plan. This plan provides the forces to continue to carry forward our maritime strategy. We believe it is a balanced plan, sir.

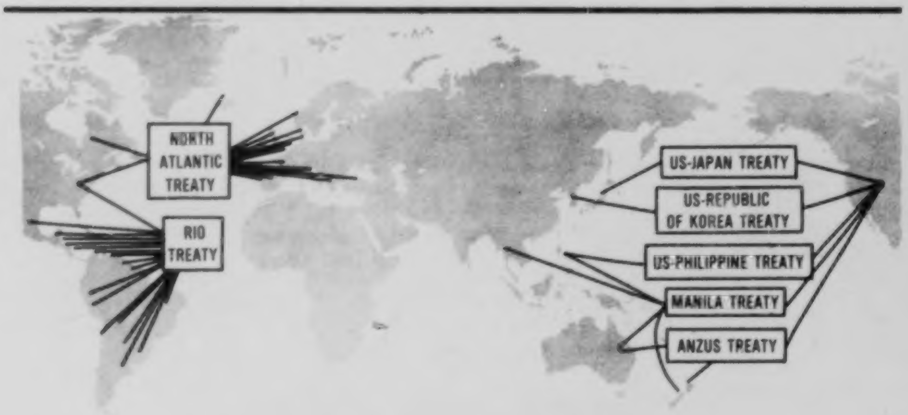
Prepared Statement of Vice Adm. Joseph Metcalf

Mr. Chairman and distinguished members of the committee, I am Vice Admiral Joseph Metcalf, III, USN, the Deputy Chief of Naval Operations for Surface Warfare and the sponsor for the Shipbuilding and Conversion, Navy (SCN) Appropriation.

It is my privilege today to present to you the Navy's SCN budget request for Fiscal Year 1987 and to review our five year shipbuilding plan. The ships we are requesting in FY 1987 will sustain and upgrade the capabilities of the Fleet to enable us to carry out the Maritime Strategy into the next century.

Ultimately, our need for a Navy is driven by the threats to our interests as a maritime nation. Since the earliest days of the Republic, the Navy has maintained the peace, fought our enemies and protected American security. With our rise to a global power, these interests expanded to include the protection of the entire Free World and the missions of the Navy and its size increased accordingly.

ALLIANCES, TREATIES AND AGREEMENTS

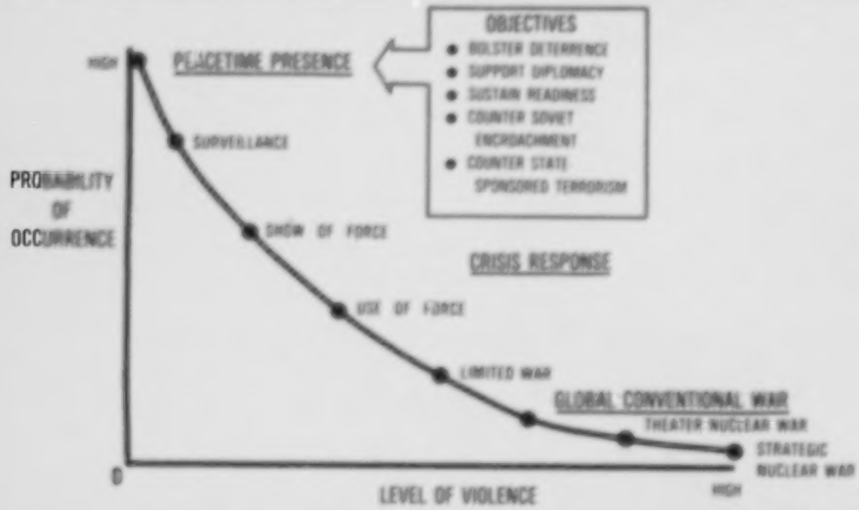


43 FORMAL ALLIANCE AND TREATY PARTNERS

MARITIME STRATEGY

Today, we have formal defense treaties with 43 nations, only two of which share a land border with us. In addition, there are a number of nations outside the formal alliance system with which we have common military and economic interests. The Maritime Strategy takes these commitments and the requirements of coalition warfare and combined operations into account. The goal of the Maritime Strategy is to deter war, but if deterrence fails we must be able to terminate any conflict on favorable terms. In fact, deterrence rests on our warfighting capability. Conflict can best be prevented by convincing any potential adversary that he cannot hope to achieve any worthwhile objective by aggression.

APPLICATIONS OF MARITIME POWER



Maritime forces have roles across the entire spectrum of conflict, from peacetime presence to nuclear war. Today, as every day, the Navy is at sea around the world, protecting our overseas interests. Wherever needed, the Navy provides the balanced forces required to permit the United States and its allies to enjoy the free use of the Sea Lanes of Communication during what the Chief of Naval Operations has described as the "era of violent peace." At the high end of the conflict spectrum, our strategic submarine force provides for crisis stability and deterrence of global war.

We believe that a 600-ship Fleet is the minimum force necessary to carry out the Maritime Strategy. It is a prudent risk force.

NAVAL FORCE LEVELS BEGINNING FY 1986

STRATEGIC SUBMARINES	37
AIRCRAFT CARRIERS	13
BATTLESHIPS	2
PRINCIPAL SURFACE COMBATANTS	210
ATTACK SUBMARINES	100
PATROL COMBATANTS	6
AMPHIBIOUS WARFARE SHIPS	62
MINE WARFARE SHIPS	3
MOBILE LOGISTIC/SUPPORT SHIPS	109
TOTAL	**542**

THE 600 SHIP NAVY

Thanks to your support our Fleet has grown from 491 ships in 1981 to 542 at the beginning of this fiscal year. We will reach the 600 ship requirement by the end of the decade when the ships presently under construction join the Fleet. The Fiscal Year 1987 request will sustain and modernize the Force by replacing aging, marginally capable units which are reaching the end of their service lives with modern units that can counter the increasing Soviet threat beyond the year 2000.

In 1985 we delivered 19 new and five converted ships. These included two Trident submarines three *Los Angeles* class nuclear attack submarines, two *Ticonderoga* class guided missile cruisers, five *Oliver Hazard Perry* class guided missile frigates and the lead ship of the Landing Ship Dock (LSD-41) class, USS *Whidbey Island*. USS *Forrestal* (CV-59) completed the Service Life Extension Program (SLEP). In addition, four TAGOS-1 Class ocean surveillance ships, two ARS-50 salvage ships, three Fast Sealift Ships (FSS) and an auxiliary crane ship (TACS) were added to the Fleet.

NAVAL FORCE LEVELS
END FY 1986

STRATEGIC SUBMARINES	38
AIRCRAFT CARRIERS	13
BATTLESHIPS	3
PRINCIPAL SURFACE COMBATANTS	214
ATTACK SUBMARINES	101
PATROL COMBATANTS	6
AMPHIBIOUS WARFARE SHIPS	62
MINE WARFARE SHIPS	3
MOBILE LOGISTIC/SUPPORT SHIPS	113
TOTAL	**553**

By the end of this fiscal year our Battle Forces will grow to 553 units.

600 SHIP FLEET COMPOSITION

- 15 CARRIER BATTLE GROUPS
- 4 BATTLESHIP BATTLE GROUPS
- 100 ATTACK SUBMARINES
- BALLISTIC MISSILE SUBMARINES
- MAF-PLUS-MAB ASSAULT ECHELON LIFT
- 14 MINE COUNTERMEASURES SHIPS
- 10 UNDERWAY REPLENISHMENT GROUPS
- 7 CONVOY ESCORT GROUPS

Our ultimate naval force objectives for the 600-Ship Fleet are:

15 Carrier Battle Groups; 4 Battleship Battle Groups; 100 Nuclear Attack Submarines; Amphibious ships for the Assault Echelons of a Marine Amphibious Force (MAF) and a Marine Amphibious Brigade (MAB); 14 Mine Countermeasures Ships; 10 Underway Replenishment Groups; 7 Convoy Escort Groups.

COMPARISON OF NAVY SHIPBUILDING PLANS

FY 1983 - FY 1987
(COMMON YEARS)

FISCAL YEARS
($ MILLIONS)

	1987	1988	1989	1990	1991
FY 1983 REQUEST	28,074.6	–	–	–	
FY 1984 REQUEST	21,248.2	27,324.8	–	–	–
FY 1985 REQUEST	16,449.2	18,756.5	21,600.8	–	–
FY 1986 REQUEST	13,734.4	17,102.2	16,526.8	16,323.8	–
FY 1987 REQUEST	11,046.2	12,295.9	13,252.9	13,101.5	14,696.9

Some people have questioned the affordability of the 600 ship force. I believe that we must sustain and continue to modernize the Fleet. If we fail to do so, history will judge that our failure was due to a lack of will, not a shortage of resources. In fact, aggressive management initiatives, a favorable marketplace and lower than anticipated inflation have drastically reduced our estimates of the level of investment required. This viewgraph (Viewgraph 6) compares common years of the Navy's shipbuilding plans over the past five years. The Fiscal Year 1983 request planned for a shipbuilding request of more than $28 billion. By last year the estimate for Fiscal Year 1987 was reduced to less than half and this year's request is $2.688 billion below that. The FY 1987 SCN request represents negative real growth for the second straight year and we envision only modest increases will be required over the next five years. By the end of this period, we predict that three percent real growth will be adequate to sustain, modernize and operate this force indefinitely.

A word of caution is in order. In actions on the Fiscal Year 1986 SCN request, approximately $2 billion was transferred from prior year programs. We have fully reflected the savings expected from competition and the lower inflation indices in our FY 1987 estimates. It would be unreasonable to expect that savings of this magnitude can be achieved in the future. I am particularly concerned about the cumulative effect of reductions on our prior year programs. Further cuts could jeopardize the executability of the programs we have under contract or preclude award of some FY 1986 ships.

SHIPBUILDING AND CONVERSION, NAVY
FY 1987 BUDGET REQUEST
($ IN MILLIONS)

PROGRAM	SHIP/TOA
TRIDENT	1/1362.7
TRIDENT AP	146.4
SSN-688	4/2047.8
SSN-688 AP	284.8
SSN-21 AP	454.3
CG-47	1913.8
CG-47 AP	10.5
DDG-51	3/2448.0
DDG-51 AP	79.8
LHD-1 AP	232.0
MSH	4/196.1
AOE-6	1/612.7
TAO	2/275.5
TAGOS	3/148.1
AGOR	33.0
CV SLEP AP	63.5
LPD-4 SLEP AP	23.1
AO (JUMBO)	1/62.3
TACS (C)	2/61.1
SERVICE CRAFT	39.9
LANDING CRAFT	19.0
STRATEGIC SEALIFT	27.8
SEALIFT ENHANCEMENT	20.7
OUTFITTING	226.1
POST DELIVERY	167.8
CONTRACT DESIGN	69.4
TOTAL	11,046.2

NAVY FIVE YEAR SCN PLAN—FISCAL YEAR 1987-91

This year we are requesting authorization and appropriation of $11,046.2 million for the construction of 21 new ships and the conversion of three others. The five year shipbuilding plan projects a total of 106 new construction ships and 20 conversions over the period from Fiscal Year 1987 through 1991. This plan reflects a continued commitment to maintain the momentum of the building program initiated five years ago and will ensure that the Navy has the necessary Battle Forces to carry out the Maritime Strategy and to meet our national requirements.

NAVY FIVE YEAR SCN PLAN

FISCAL YEAR 1987 - 1991

($ IN MILLIONS)

NEW CONSTRUCTION	FY-87	FY-88	FY-89	FY-90	FY-91
TRIDENT	1/1509.1	1/1516.5	1/1560.8	1/1621.2	1/1677.1
SSN-688	4/2332.6	3/2046.9	3/2200.7	4/2858.9	1/853.2
SSN-21	454.3	160.2	1/1515.1	604.7	2/2598.5
CG-47	2/1924.3	2/1902.6	2/1837.0	2/1872.4	-
DDG-51	3/2527.8	3/2354.6	3/2480.7	3/2431.2	5/3997.2
LHD-1	232.0	1/1046.9	1/705.4	43.8	1/1340.4
LSD-41 (CV)	-	1/311.2	1/281.1	1/283.0	1/293.9
MCM	-	3/272.2	-	-	-
MSH	4/196.1	4/181.8	4/183.0	-	-
TAO	2/275.5	2/319.9	2/314.0	2/318.1	2/347.4
TAGOS	3/148.1	3/193.9	2/118.7	2/117.9	-
AE	-	1/369.8	-	2/593.8	2/623.7
AOE-6	1/612.7	-	1/520.0	1/545.8	1/542.6
ARS	-	-	-	-	1/109.8
AGOR/AGX	1/33.0	-	-	2/90.5	3/110.9
LCAC	-	(9)/221.3	(9)/226.3	(9)236.0	(9)240.6
CONVERSIONS					
CV SLEP	83.5	1/544.8	155.4	155.2	1/797.4
LPD-4 SLEP	23.1	97.8	1/260.9	3/443.3	3/425.8
AO(JUMBO C)	1/62.3	1/49.5	1/71.3	2/115.6	-
TACS (C)	2/61.1	2/59.9	2/62.6	-	-
OTHER					
SERVICE CRAFT	39.9	30.2	56.4	68.5	76.1
LANDING CRAFT	19.0	60.5	84.7	72.2	44.4
STRAT SEALIFT	27.8	50.4	27.1	76.4	26.6
SEALIFT ENHANCE	20.7	18.4	22.8	21.8	21.4
OUTFITTING	226.1	286.3	275.4	270.8	303.1
POST DELIVERY	167.8	137.6	230.5	173.1	149.9
CONTRACT DESIGN	69.4	62.7	63.0	87.3	116.9
TOTAL	11,046.2	12,295.9	13,252.9	13,101.5	14,696.9
SHIP COUNT	21/3	24/4	21/4	20/5	20/4

The principal changes from the Fiscal Year 1987 column of last year's request include:

Deletion of the Battleship *Wisconsin* as a result of its appropriation in FY 1986.

Reduction of the request for *Ticonderoga* (CG-47) Class cruisers from three to two.

Increase in the request for *Arleigh Burke* (DDG-51) Class destroyers from two to three.

Delay of the *Avenger* (MCM-1) class.

Acceleration of the TAGOS oceanographic research ships.

Acceleration of the AO-177 Jumboization Program from FY 1988 to 1987.

Restructuring of the Landing Craft Air Cushion (LCAC) profile.

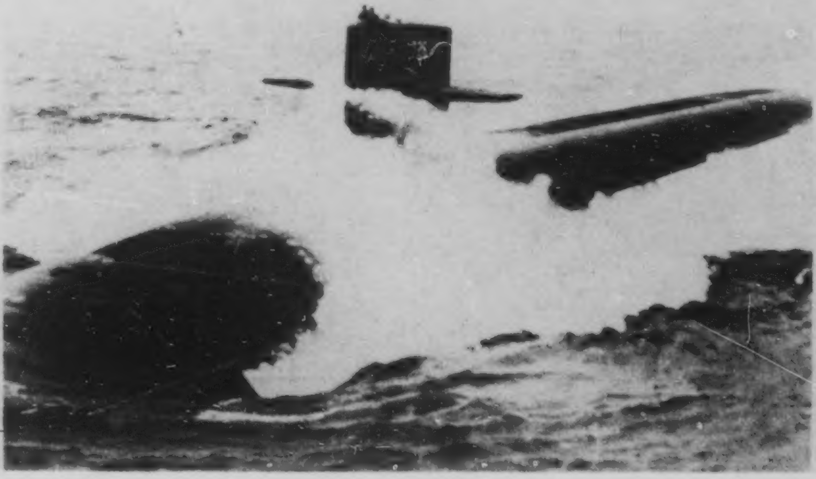
I will now give you a description of each program for which we are requesting funding.

STRATEGIC SUBMARINE FORCE

We presently have 37 strategic submarines (SSBNs) in the Force, including 30 submarines of the *Lafayette, James Madison* and *Benjamin Franklin* classes and seven Trident I C-4 configured *Ohio* class submarines. Twelve ships of the earlier classes have been converted to carry the Trident I missile.

The SSBNs comprise the most secure element of our strategic triad and provide the basic underpinning of our deterrent strategy. Their survivability under all conditions of war initiation promotes stability in a crisis and their endurance provides for control of escalation in a conflict.

TRIDENT SUBMARINE - SSBN



"OHIO" CLASS SUBMARINE

We plan to maintain a building rate of one Trident submarine per year throughout the five year defense plan. The ultimate force level objective is undetermined.

The first eight ships of the class will carry 24 Trident I C-4 submarine launched ballistic missiles. The changeover to the more potent Trident II D-5 missile will commence with the ninth ship, which was funded in Fiscal Year 1981. In the early 1990s we plan to begin to reconfigure the first eight ships to carry the Trident II missile.

This year we are requesting $1509.1 million for the 14th *Ohio* class submarine. This includes $146.4 million for long lead materials for follow-on ships.

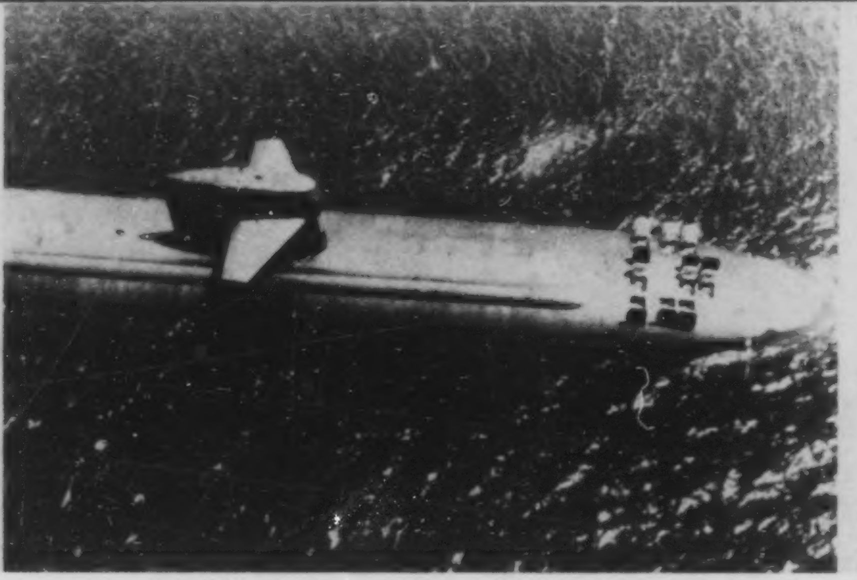
ATTACK SUBMARINE FORCE

The Soviet submarine force is the largest in the world, numbering some 300 active units of two dozen classes. Nearly half of the force is nuclear powered and this percentage is expected to increase in the years ahead as heavy Soviet investment in submarine construction continues to bear fruit. Currently, the Soviets are testing or building nine different classes of submarines. Four classes of attack submarines have achieved initial operational capability since 1983.

Countering this formidable threat is the primary mission of the U.S. nuclear attack submarines. The overall force level objective remains at 100 ships. There are currently a total of 96 nuclear attack submarines in the Force. Of these, 33 are *Los Angeles* (SSN-688) class submarines. Eighteen additional units of this class have been authorized and appropriated through 1986 and 15 of these are under contract.

We will introduce the *Seawolf* (SSN-21) class submarine during the next five years in order to maintain our qualitative lead over the Soviet submarine force.

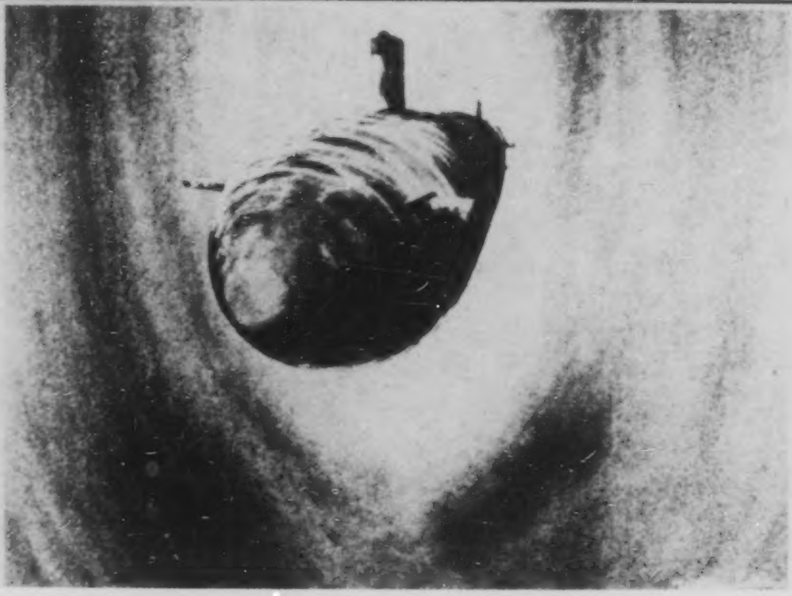
NUCLEAR ATTACK SUBMARINE - SSN 688



"LOS ANGELES" (SSN-688) CLASS SUBMARINE

This year's budget request includes $2332.6 million in full funding for four more improved SSN-688 Class submarines and long lead material fo the FY 1988 and 1989 ships. These ships incorporate the Vertical Launch System (VLS) for TOMAHAWK as well as enhanced arctic capabilities, improved quieting and improved combat control systems.

NUCLEAR ATTACK SUBMARINE - SSN 21



"SEAWOLF" (SSN-21) CLASS SUBMARINE

This year we are requesting $454.3 million in advance procurement for the lead ship of the SSN-21 Class. This new class is designed to counter the rapidly increasing capabilities of the Soviet submarine force. It is a quieter, faster and more heavily armed submarine designed to deploy to forward ocean areas to seek out and destroy enemy submarines and surface ships and attack land targets. The many new features of this submarine represent a quantum improvement over earlier designs. Recent analysis predicts improved exchange ratios against the projected threat. We plan to request full funding for the lead ship in the class in Fiscal Year 1989.

AIRCRAFT CARRIERS

Our 13 aircraft carriers are deployed worldwide in support of our national commitments. They are capable of executing response options ranging from peacetime presence through general war. Together with their embarked air wings, the carriers have vital roles in strike, anti-surface, anti-air and anti-submarine warfare across the full conflict spectrum.

As I indicated earlier, we are building to a force level of 15 deployable aircraft carriers. We expect to attain 14 by the end of next year and 15 by 1990. Three *Nimitz* class unclear powered cariers are under construction at Newport News Shipbuilding Company. The first of these, USS *Theodore Roosevelt* (CVN-71) is scheduled for delivery in September of this year. One conventionally powered carrier, USS *Independence* (CV-62), is undergoing service life extension at Philadelphia Naval Shipyard. This program will add approximately 15 years to the service life of our older carriers.

AIRCRAFT CARRIER SERVICE LIFE EXTENSION PROGRAM-CV SLEP

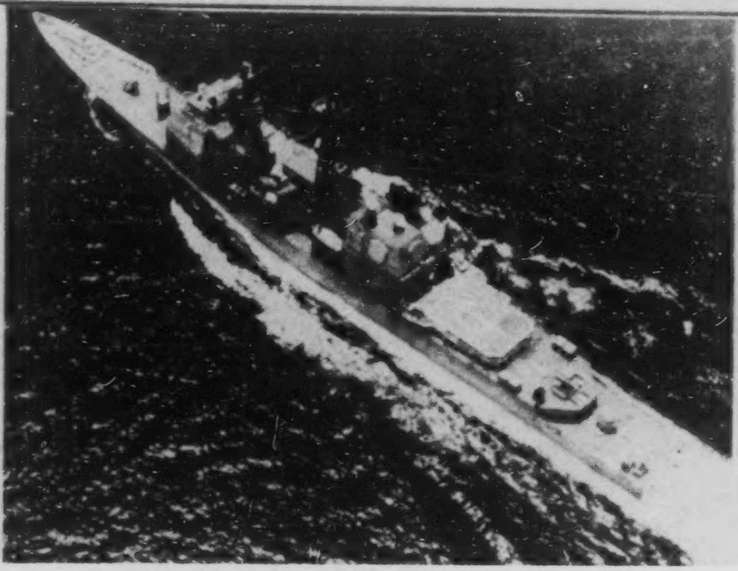
Last year the Congress appropriated $52.0 million in advance procurement for the USS *Kitty Hawk* (CV-63) SLEP. During the budget formulation this past spring, we moved the start of *Kitty Hawk* from Fiscal Year 1987 to 1988. this year we are requesting $83.5 in additional advance procurement to support the FY 1988 start.

SURFACE COMBATANTS

For many years the Soviets were expanding their surface forces both qualitatively and quantitatively while U.S. and allied force levels dwindled. The shipbuilding programs of the last five years and the warfighting improvements we have made to our existing ships have reversed these adverse trends. The Aegis Combat System and Vertical Launch System (VLS) have revolutionized surface warfare. The Aegis System can make lightning fast decisions based on our planning and simultaneously engage numerous air, surface and subsurface contacts. The dramatic increase in the offensive power of our surface combatants has expanded their contribution to our overall warfighting capabilities.

Our minimum force level objective is four reactivated battleships, 33 guided missile cruisers, 67 guided missile destroyers, 37 destroyers and 101 frigates. We are constantly reviewing these force level requirements in the context of our Maritime Strategy as the threat evolves. Presently our most severe shortfall is in guided missile destroyers.

GUIDED MISSILE CRUISER-CG47



"TICONDEROGA" (CG-47) CLASS GUIDED MISSILE CRUISERS

During Fiscal Year 1985 USS *Yorktown* (CG-48), the second ship of the *Ticonderoga* class, deployed on extended operations. USS *Vincennes* (CG-49) was commissioned and USS *Thomas S. Gates* (CG-51), USS *Bunker Hill* (CG-52) and USS *Mobile Bay* (CG-53) were launched. USS *Valley Forge* (CG-50) was commissioned in January 1986. Twelve additional ships are under contract.

In FY 1987 are are requesting $1924.3 million in full funding for two more CG-47s. This includes $10.5 million for advance procurement for the Fiscal Year 1988 ships. The eight cruisers we plan to procure over the next four years will complete the class of 27 ships.

The last CG-47 baseline will incorporate all the proven capabilities of the Aegis Combat System along with LAMPS III, the Vertical Launch System (VLS), Tomahawk missiles, the SQQ-89 ASW Upgrade, the SPY-1B Radar, the SQS-53B Sonar and improved computers.

GUIDED MISSILE DESTROYER - DDG 51

"ARLEIGH BURKE" (DDG–51) CLASS GUIDED MISSILE DESTROYERS

The *Arleigh Burke* class DDGs are intended to replace the aging DDG–2 and DDG–37 class guided missile destroyers which are reaching the end of their service lives.

The DDG–51 will be the most powerful class of destroyers ever to go to sea. It will carry the Aegis Combat System, the VLS, Tomahawk, Harpoon and Standard (SM-2) missiles as well as a 5"/54 caliber Lightweight Gun, the Close-in Weapon System (CIWS), ASROC and anti-submarine torpedoes. This ship also will incorporate enhanced survivability and damage control features.

The Congress funds the lead ship in the class in Fiscal Year 1985. In FY 1987 we are requesting $2527.8 million in full funding for three ships. The amount includes $79.8 million in advance procurement for the Fiscal Year 1988 ships.

We plan to procure 17 DDG–51s over the period 1987 through 1991. The present force level objective for this class is 29 ships.

AMPHIBIOUS WARFARE SHIPS

Amphibious warfare ships are uniquely designed to support assault from the sea against defended positions ashore. They must be able to sail in harm's way and provide a rapid buildup of combat power ashore in the face of opposition. The United States maintains the largest and most capable amphibious force in the world and the current building program will further enhance that capability as newer units join the Fleet.

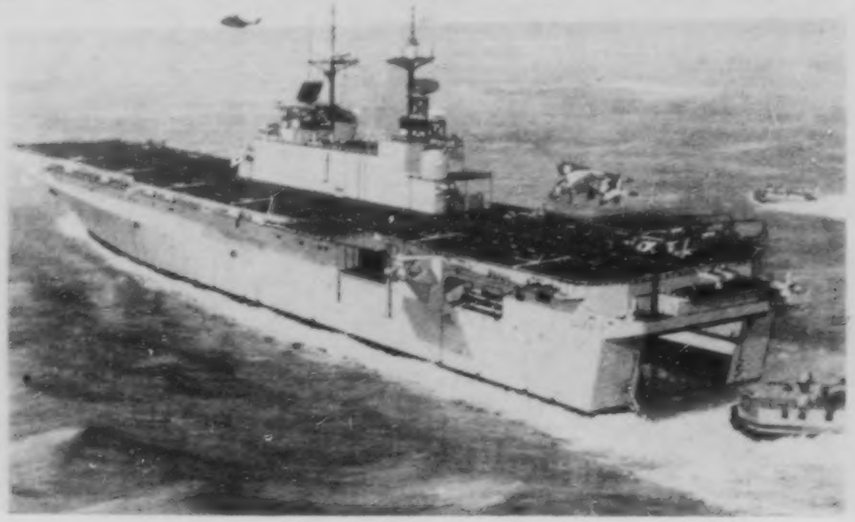
In 1981 the lead ship of the *Whidbey Island* (LSD–41) class was appropriated and that ship was delivered in January of last year. A total of eight LSD–41s have been funded to date.

The lead ship of a three ship multi-year HHD–1 program was approved last year. This class is intended to replace the aging LPH Helicopter Assault Ships. The LHD–1 Class is designed to be the most versatile amphibious ship ever built. A modification to the highly successful LHA class, the LHD will greatly increase our lift capacity, provide a flight deck for helicopters and vertical/short takeoff (V/STOL) aircraft and a large well deck for conventional landing craft and the Landing Craft Air Cushion (LCAC). It will have the capability of performing secondary power projection and sea control missions.

Our goal is to attain sufficient amphibious ships to carry the assault echelons of a Marine Amphibious Force (MAF) plus a Marine Amphibious Brigade (MAB) by 1996. This represents a delay of two years in attainment of our lift objective, chiefly because of fiscal constraints.

The FY 1987 budget request includes no new LCAC. These craft are undergoing extensive operational tests and engineering enhancements to improve reliability.

AMPHIBIOUS ASSAULT SHIP - LHD 1



"WASP" (LHD-1) CLASS AMPHIBIOUS ASSAULT SHIPS

In FY 1987 we are requesting $232.0 million for long lead material for LHD-3 and LHD-4. We plan to build a total of three ships of this class over the five year plan.

AMPHIBIOUS TRANSPORT DOCK LPD 4
SERVICE LIFE EXTENSION PROGRAM (SLEP)

"AUSTIN" (LPD-4) CLASS AMPHIBIOUS TRANSPORT DOCK SERVICE LIFE EXTENSION PROGRAM

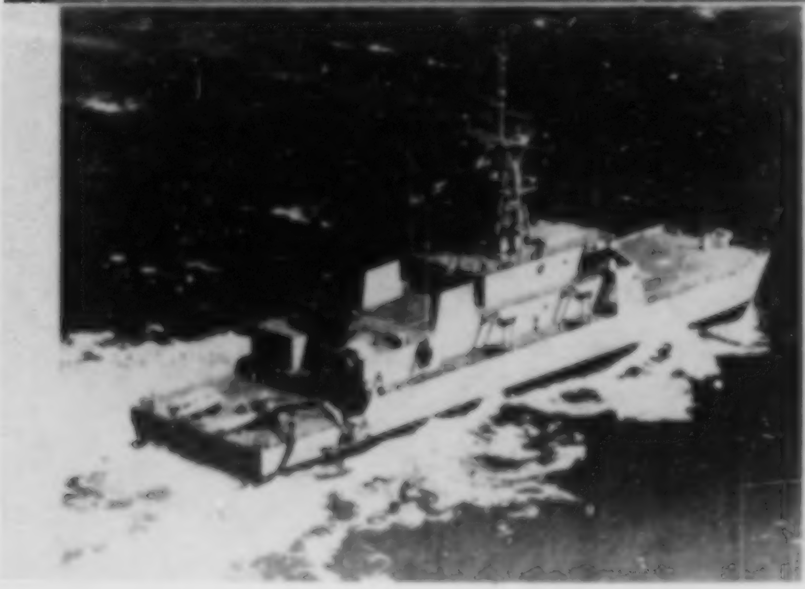
We are planning to commence the LPD-4 Class Service Life Extension Program (SLEP) in FY 1989. This will extend the service life of these ships 45 years, modernize their engineering plants and improve survivability and self-protection systems. This year we are requesting $23.1 million for advance procurement for the first ship.

MINE COUNTERMEASURES FORCES

The Soviet Union possesses the world's largest offensive mining capability. In the event of war, mines could be employed to deny use of harbors, straits and coastal waters, thereby jeopardizing the importation of strategic materials and the reinforcement and resupply of U.S. and allied forces in Europe and Asia.

For many years our mine countermeasures capability has been inadequate to meet the threat. Our oceangoing minesweepers are approaching obsolescence and are increasingly difficult to maintain. We have established a minimum objective of 31 new countermeasures units which, in conjunction with our MCM helicopters, will have the mission of clearance of U.S. waters in time of war. Current plans call for 14 *Avenger* (MCM-1) class ships and 17 *Cardinal* (MSH-1) class Minesweeper Hunters. Eleven MCMs have been funded to date and the last three units will be requested next year.

MINESWEEPER HUNTER - MSH 1



"CARDINAL" (MSH-1) CLASS MINESWEEPER HUNTERS

The lead ship of the MSH-1 class was funded in FY 1984 and four more were appropriated last year. The remainder of the class will be requested over the next three years.

The MSH is a surface effect ship with a glass reinforced plastic hull to minimize the danger from magnetic mines. The MSH will use much of the same mission equipment as the MCM. These ships will be operated by the Naval Reserve Force.

This year we are requesting $196.1 million for four ships of this class.

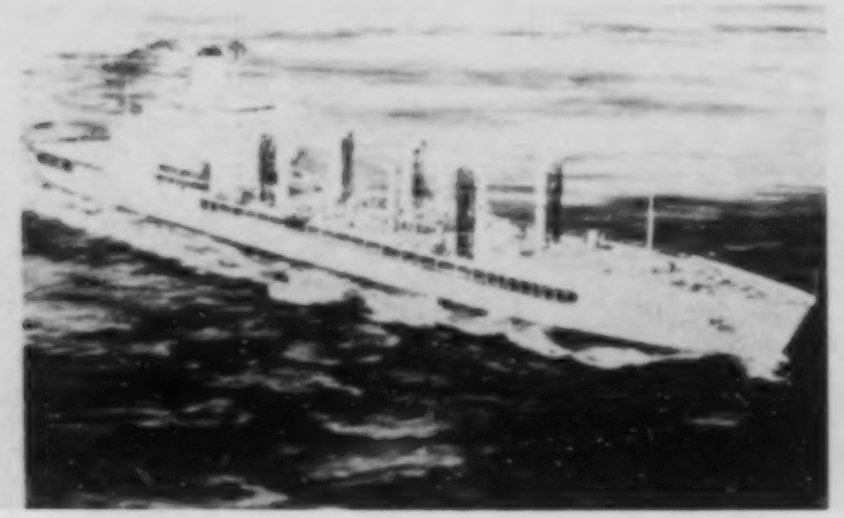
MOBILE LOGISTIC SUPPORT FORCES

The expanding Fleet requires additional logistic support forces. These forces consist of multi-product "station ships" such as the AOE with the speed and capability to remain with the Carrier Battle Groups and shuttle ships to carry fuel, ordnance, stores and provisions from advance logistic bases or consolidation points at sea. Shuttle ships include Fleet oilers (AOs/TAOs), ammunition ships (AEs/TAEs.) and stores ships (AFS/TAFS). In the event of non-availability of an AOE or AOR, one AO/TAO and one AE may be assigned to the Battle Group.

FAST COMBAT SUPPORT SHIP-AOE 6

Our force level objective is 15 station ships. The four AOEs we require to meet our objective are planned for procurement over the period FY 1987 through FY 1991. We are requesting $612.7 million for the lead ship of the AOE-6 class this year.

FLEET OILER-TAO 187



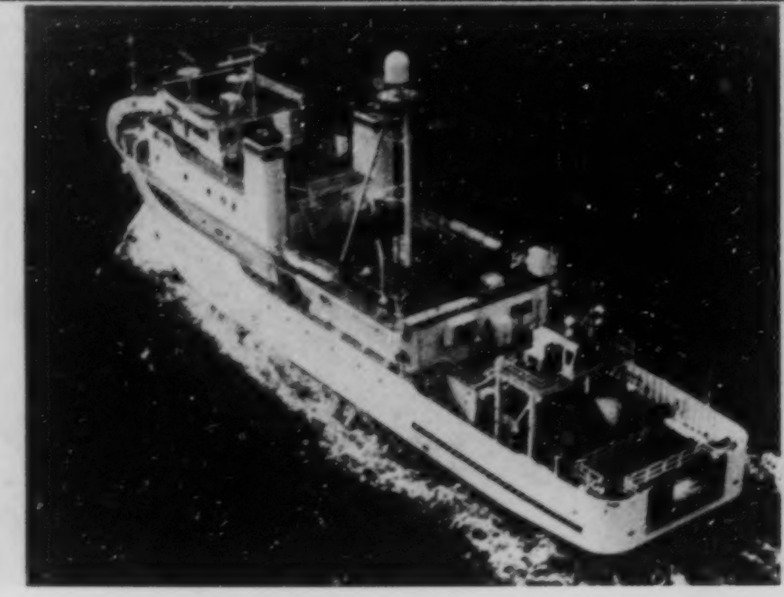
This is the sixth year we are requesting funding for the TAO-187 class. Our present force level objective is 19 ships. To date a total of nine ships have been appropriated. This year we are requesting $275.5 million for additional units. The remaining ships in the class will be constructed over the last four years of the five year plan.

FLEET OILER JUMBOIZATION · AO 177

"CIMARRON" (AO–177) CLASS FLEET OILER JUMBOIZATION

The FY 1987 budget requests $62.3 million to fully fund the jumboization of the first AO–177 class oiler. The present design would increase the capacity of the five ships of this class from 120,000 barrels to 180,000 barrels. We also are studying an ammunition variant of this design. The last four units of the class will be jumboized over the next four years.

OCEAN SURVEILLANCE SHIP - TAGOS



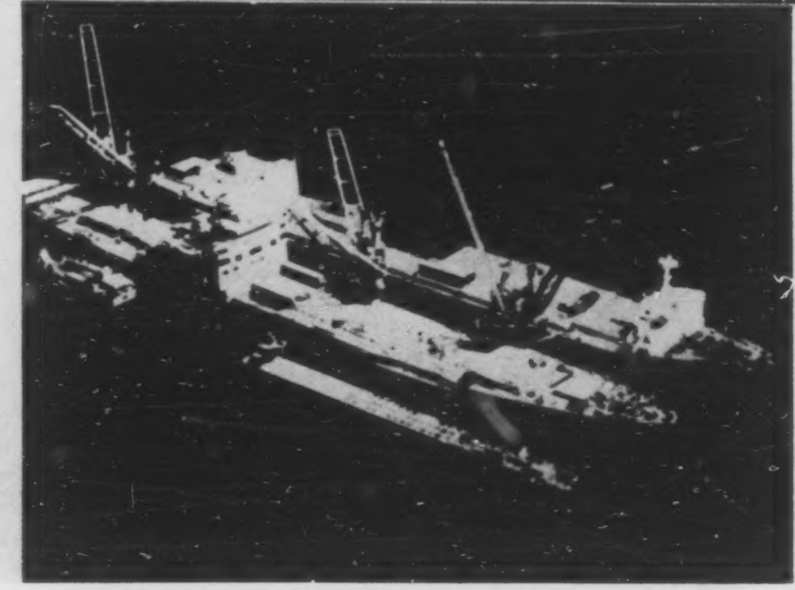
We presently plan to request a total of 26 TAGOS ocean surveillance ships. Their mission is to collect, process and transmit acoustic data. The first 14 ships of the class have been appropriated. Early results from these ships and their towed array sonars have been impressive. We currently are planning to change from a conventional monohull to a Small Waterplane Area Twin Hull (SWATH) design to improve our capability to operate in high latitudes under adverse weather conditions. The lead SWATH ship was appropriated in FY 1986.

This year we are requesting $148.1 million for the last three monohull units. Commencing in FY 1988 we plan to procure the follow-on SWATH units.

OCEANOGRAPHIC RESEARCH SHIP - AGOR 23

As part of our effort to enhance the Navy's contribution to oceanographic research, we are planning to procure several new oceanographic research vessels. The AGOR-23 will be built to commercial standards and operated by civilian academic institutions. We are requesting $33 million in FY 1987 to fund this ship.

AUXILIARY CRANE SHIP-TACS



We are requesting $61.1 million to convert two auxiliary crane ships this year. The purpose of these ships is to offload containerized and outsized cargo from non-self sustaining cargo ships, either offshore or in undeveloped or damaged ports. A total of six TACS are included in the five year plan.

CRAFT
($ MILLION)

SERVICE CRAFT	
TORPEDO TESTER (YTT)	1/19.0
FLOATING CRANE (YD)	3/15.9
FUEL BARGE (YON)	2/2.8
OIL STORAGE BARGE (YOS)	2/2.2
	8/39.9
LANDING CRAFT	
SURFACE WARFARE CRAFT MEDIUM (SWCM)	1/19.0

SERVICE CRAFT

The FY 1987 request for craft include $39.9 million to procure a variety of service craft. This includes funding for one Torpedo Tester (YTT), which has been capped at $19.0 million. Also included are $15.9 million for three Floating Cranes (YD), $2.8 million for two. Fuel Barges (YON) and $2.2 million for two Oil Storage Barges (YOS).

LANDING CRAFT

We are requesting $19 million in the Landing craft line for the Special Warfare Craft (Medium) program. We plan to request a total of 18 units through FY 1990 to complete the program.

OTHER SHIPBUILDING
($ MILLION)

	FY 1987
STRATEGIC SEALIFT	27.8
SEALIFT ENHANCEMENT	20.7
OUTFITTING	226.1
POST DELIVERY	167.8
CONTRACT DESIGN	69.4
NET REQUIREMENT	**511.8**

STRATEGIC SEALIFT

Commencing in FY 1984, the Navy requested funds to purchase merchant ships which were no longer competitive in commercial trade in order to build up the Ready Reserve Force (RRF) to ensure rapid availability of adequate sealift in event of war. As the Merchant Marine continues to shrink, the RRF has grown. There will be 85 ships in the RRF by the end of this year. The objective is 116 ships by 1991. These include tankers, dry cargo ships, auxiliary crane ships, container ships and roll on/ roll off (RO/RO) ships. We are requesting $27.8 million to continue this program in FY 1987.

SEALIFT ENHANCEMENT—CIVIL RESERVE AUXILIARY FLEET (CRAFT)

We are requesting funds for the first time to pay for the construction of commercial ships with militarily useful features in U.S. shipyards. This program parallels the Air Force Civil Reserve Air Fleet (CRAF) Enhancement Program. The Sealift Enhancement Program is intended to stimulate ship operators to build ships in U.S. shipyards and increase employment for merchant officers and seamen. The FY 1987 budget request includes $20.7 million for this new program.

OUTFITTING/POST DELIVERY

We are requesting $226.1 million for outfitting and $167.8 million for post delivery. Outfitting funds purchase repair parts and consumables to fill initial ship allowances for ships approaching delivery. Post delivery funds are used to pay for all work required to correct deficiencies identified during trials or post delivery.

SHIP CONTRACT DESIGN

This year the Ship Contract Design funding is included in the SCN Appropriation. The contract design phase is normally a joint Navy-shipbuilder effort which produces the contract drawings and specifications for the ships in the five year plan.

Including ship Contract Design under the SCN Appropriation will ensure a better correlation between the designs and the building profiles and improve reaction to late changes to the shipbuilding plan.

Mr. Chairman, that concludes my overview of the FY 1987 SCN Plan. I appreciate this opportunity to appear before your committee to assist you in your deliberations on the Defense Authorization Bill. I urge your continued strong support for our shipbuilding program.

Mr. **Bennett**. We will come back to you. Mr. Spence has a motion to make at this time.

Mr. **Spence**. Mr. Chairman, I move that the Chairman be authorized to close today's hearing and five additional consecutive days of hearings at his discretion when disclosure of the subject matter under consideration would endanger the national security.

Mr. **Bennett**. This requires a vote.

Mr. **Schafer**. Mr. Bennett.

Mr. **Bennett**. Aye.

Mr. **Schafer**. Mr. Spence.

Mr. **Spence**. Aye.

Mr. **Schafer**. Mr. Foglietta.

[No response.]

Mr. **Schafer**. Mr. Hartnett.

[No response.]

Mr. **Schafer**. Mr. Dyson.

Mr. **Dyson**. Aye.

Mr. **Schafer**. Mr. Hunter.

Mr. **Hunter**. Aye.

Mr. **Schafer**. Mrs. Lloyd.

[No response.]

Mr. **Schafer**. Mr. Carney.

[No response.]

Mr. **Schafer**. Mr. Sisisky.

Mr. **Sisisky**. Aye.

Mr. **Schafer**. Mr. Bateman.

Mr. **Bateman**. Aye.

Mr. **Schafer**. Mr. Ortiz.

Mr. **Ortiz**. Aye.

Mr. **Schafer**. Mr. Blaz.

[No response.]

Mr. **Schafer**. Mr. Bustamante.

Mr. **Bustamante**. Aye.

Mr. **Schafer**. Mr. Price.

[No response.]

Mr. **Schafer**. Eight ayes. A sufficient number.

Mr. **Bennett**. All right. We'll hold that in abeyance; we won't declare an executive session yet.

We will hear now from Vice Adm. William Rowden.

STATEMENT OF VICE ADM. WILLIAM H. ROWDEN, COMMANDER, NAVAL SEA SYSTEMS COMMAND, DEPARTMENT OF THE NAVY

Admiral **Rowden**. Mr. Chairman, I would ask that my statement be entered into the proceedings, and I have no further statement to make at this time, sir.

Mr. **Bennett**. Without objection, that will be done.

Prepared Statement of Vice Adm. William H. Rowden

Mr. Chairman, thank you for the opportunity to appear before this Subcommittee and discuss the Navy's shipbuilding and repair programs. I appreciate the continued support of the Congress in ensuring we have a strong and capable defense.

The Naval Sea Systems Command (NAVSEA) is responsible for programs that are large, complex and diverse, and represent a substantial portion of the Navy's budget. Accordingly, we recognize a special responsibility to produce ships and weapons systems as cost effectively as possible. At the same time, we know we cannot sacrifice product quality. We're sending the men and women of the U.S. Navy to sea in these ships, and asking them to perform missions vital to our national security. Second-rate quality is unacceptable.

These two requirements—cost effectiveness and high quality—are by no means mutually exclusive. In fact, we have found at NAVSEA that they are both attained by using the same tools: strong program management and proper technical engineering. These tools have served us well in building the ships of the 600-ship Navy. They will continue to serve us as we complete the rebuilding of the Fleet and maintain it into the future.

Improved management of Navy procurement has been affected by the removal of the layer of bureaucracy represented by the Chief of Navy Material. At NAVSEA, this change has streamlined and improved our organizational relationship with the Chief of Naval Operations and the Secretary of the Navy. In ship maintenance and repair, better management of our resources has produced several initiatives to reduce cost without sacrificing quality or performance. These include:

Scheduling longer periods between overhauls by relying on carefully developed phased maintenance programs for different classes of ships;

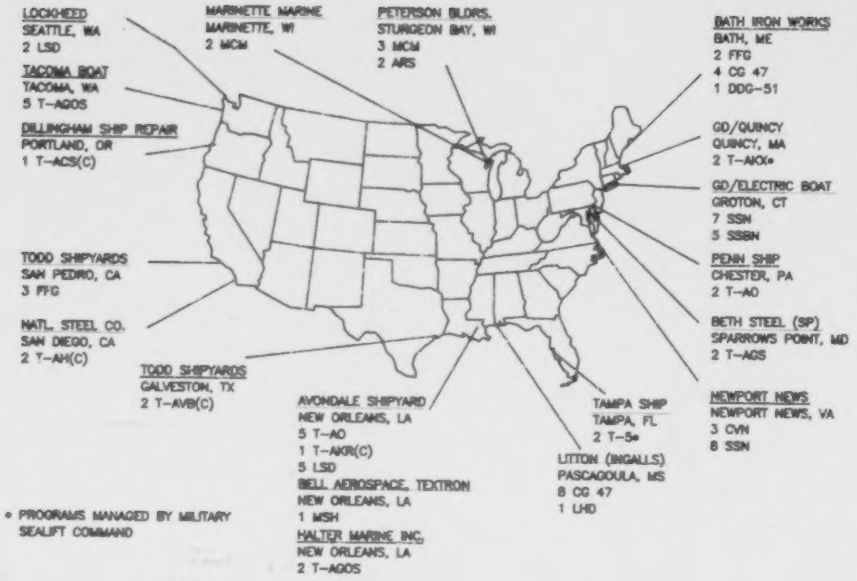
Ensuring that repair dollars and facilities are used on equipment that needs to be repaired, not on components that are non-critical or equipment with parts only slightly worn that will still provide long, reliable operation;

Resisting the tendency to over-specify, by keeping our sights on the intended use and original requirements of each product; and

Leading the way in the restructuring of public shipyards to emphasize cost efficiency while maintaining quality and technical standards.

Increased competition has become a basic tenet of the Navy shipbuilding program. In FY 86, all shipbuilding and conversion contracts, with the exception of the Ohio-class submarines, will be competitively awarded. The same is true of all 126 ships in the FY 87-91 shipbuilding plan. An example of cost benefits derived through competition is the AEGIS Guided Missile Cruiser (CG-47) program. Construction of follow-on AEGIS ships was first competed in FY 84 with two ships awarded to Ingalls Shipbuilding and one to Bath Iron Works. Approximately $224.6 million in savings, compared to the budget request, was realized as a result. In FY 85, three CG-47 cruisers were again awarded competitively Bath won two ships and Ingalls one, saving nearly $210 million more. In January 1986, we exercised options for the three FY 86 ships, two more awarded to Bath and one to Ingalls. These option prices also reflect a savings when compared to our original FY 86 estimates. Bid prices are below our expectations and experience. There is the need to watch progress carefully and husband our reserves until ships and systems are completed. Other examples of competition will be noted in this statement. The point is that it has proven a substantial contributor to lowering prices. The Navy will continue to reduce prices through competition in shipbuilding wherever possible.

Technical engineering excellence is another aspect of our cost efficiency and product quality. It is also NAVSEA's most fundamental and essential responsibility. Recent organizational changes at NAVSEA Headquarters have been designed to maximize our engineering resources—to make the most of what I believe is a very capable and highly skilled team of naval engineers and architects. The Chief of Naval Operations recently established the post of Chief Engineer of the Navy, at the grade of Vice Admiral, who serves within NAVSEA and strengthens the Navy's capability and resolve for engineering excellence. Navy ships and weapons systems are long-term capital investments in our nation's defense—some serve nearly half a century. We recognize that proper engineering throughout a project—from preliminary design through life-cycle maintennance of the product—will save money by minimizing the need for design changes and costly repairs. The key to maintaining the 600-ship Navy will be affordability in maintenance and repair, and in the replacement of obsolescing ships. The factors I have mentioned—improved management, increased competition and technical engineering excellence—will produce the high degree of cost efficiency and associated engineering quality necessary to get the job done. I will now turn to some of the specifics of the Navy shipbuilding program.


LOCKHEED
SEATTLE, WA
2 LSD
TACOMA BOAT
TACOMA, WA
5 T-AGOS
DILLINGHAM SHIP REPAIR
PORTLAND, OR
1 T-ACS(C)
MARINETTE MARINE
MARINETTE, WI
2 MCM
PETERSON BLDRS.
STURGEON BAY, WI
3 MCM
2 ARS
BATH IRON WORKS
BATH, ME
2 FFG
4 CG 47
1 DDG-51
GD/QUINCY
QUINCY, MA
2 T-AKX•
GD/ELECTRIC BOAT
GROTON, CT
7 SSN
5 SSBN
PENN SHIP
CHESTER, PA
2 T-AO
BETH STEEL (SP)
SPARROWS POINT, MD
2 T-AGS
TODD SHIPYARDS
SAN PEDRO, CA
3 FFG
NATL. STEEL CO.
SAN DIEGO, CA
2 T-AH(C)
TODD SHIPYARDS
GALVESTON, TX
2 T-AVB(C)
AVONDALE SHIPYARD
NEW ORLEANS, LA
5 T-AO
1 T-AKR(C)
5 LSD
BELL AEROSPACE, TEXTRON
NEW ORLEANS, LA
1 MSH
HALTER MARINE INC.
NEW ORLEANS, LA
2 T-AGOS
TAMPA SHIP
TAMPA, FL
2 T-5•
LITTON (INGALLS)
PASCAGOULA, MS
8 CG 47
1 LHD
NEWPORT NEWS
NEWPORT NEWS, VA
3 CVN
8 SSN
• PROGRAMS MANAGED BY MILITARY SEALIFT COMMAND

PRIVATE SHIPYARDS WITH NAVY CONSTRUCTION PROGRAMS
(1 JANUARY 1986)
CHART 1

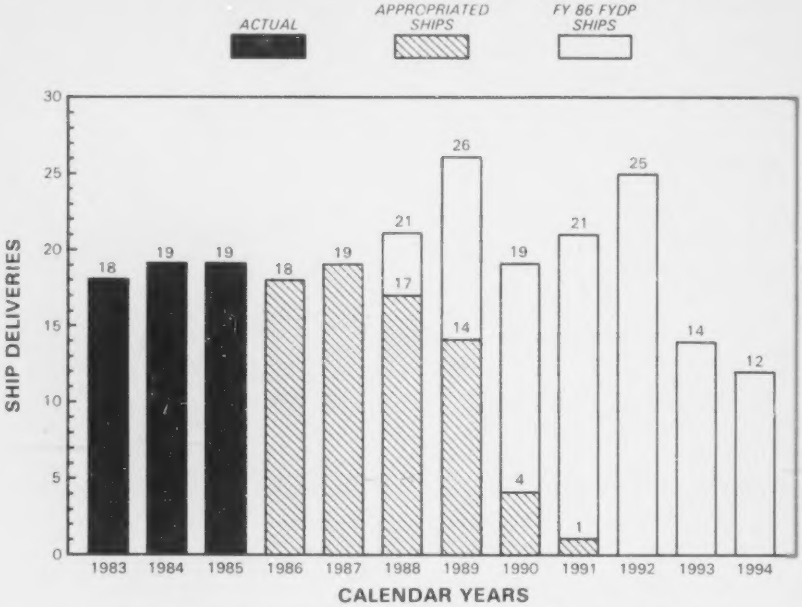
Within the private sector, there are 19 shipyards currently building or converting ships for U.S. Navy. These shipyards and the Navy ships they have under contracts as of 1 January 1986 are shown in Chart 1.

NAVY SHIPS UNDER CONSTRUCTION OR CONVERSION (JANUARY 1, 1986)—CHART 2.

SHIPTYPE	SHIPYARD	Quantity
Amphibious assult ship (LHD-1)	Ingalls	1
Aircraft carrier (CVN)	Newport News	3
Guided missile cruiser (Aegis) (CG)	Ingalls, Bath	12
Guided missile destroyer (DDB)	Bath	1
Landing ship dock (LSD)	Lockheed, Avondale	7
Guided missile frigate (FFG)	Bath, Todd LA	5
Mine countermeasures (MCM)	Peterson, Marinette Marine	5
Minesweeper hunter (MSH)	Bell-Textron	1
Fleet oiler (T-AO)	Avondale, Penn Ship	7
Tanker (T-5)	Tampa Ship	[1] 2
Salvage ship (ARS)	Peterson	2
Ocean surveillance (T-AGOS)	Tacoma Boat, Halter Marine	7
Ocean survey ship (T-AGS)	Beth Steel (SP)	2
Fleet ballistic missile submarine ("Ohio" class)	Electric Boat	5
Attack submarine ("Los Angeles" class)	Electric Boat, Newport News	15
Prepositioning ship (TAKX)	Quincy	[1] 2
Battleship (reactivation)	Long Beach NSYD	1
Aircraft carrier (SLEP)	Philadelphia NSYD	1
Hospital ship (T-AH conv)	National Steel	2
Crane ship (T-ACS conv)	Dillingham	1
Fast logistic ship (T-AKR conv)	Avondale	1
Aviation logistics support ship (T-AVB conv)	Todd Galveston	2
Total		85

[1] Programs managed by Military Sealift Command.

Chart 2 depicts the Navy ships under construction or being converted in the private sector as of 1 January 1986. These include 77 new construction and 6 conversions. In addition, the battleship *Missouri* is being reactivated at Long Beach Naval Shipyard and the aircraft carrier USS *Independence* is in Service Life Extension Program (SLEP) at Philadelphia Naval Shipyard.



NAVY NEW SHIP CONSTRUCTION DELIVERIES
(1 JANUARY 1986)
CHART 3

The Navy new construction and conversion program in general is doing well. The Navy's business relationships with the shipbuilders continue healthy. There are no new construction shipbuilding claims outstanding against the Navy. In 1985, 19 new construction and 5 conversion or reactivation ships were delivered, 7 early, 12 on time, and 5 late. In 1986, 18 new construction and 5 conversion ships are estimated to deliver, 7 on time, 9 early, and 7 late. Chart 3 shows in graphic form only the deliveries of new construction ships and does not include the conversions and reactivations in the shipbuilding program.

Shipbuilding program cost performance in recent years has also been good. Most of the ships we currently have under contract are within their original budget, as is the overall shipbuilding program at this time.

I will now briefly discuss the status of some of these programs.

BATTLESHIP REACTIVATION

The reactivation and modernization of the *Iowa*-class battleships is continuing to progress very well. USS *New Jersey* has been in the active fleet since March 1984 and has met all operational commitments to date.

USS *Iowa*'s four-month PSA completed in July 1985, on schedule, and within cost. She has met her operational commitments and has performed well in deployments. The reactivation of *Iowa* was completed for $397.7M, several million dollars within budget (including that amount approved by Congress for acceleration of the reactivation to meet national security developments in the Middle East).

The reactivation and modernization of USS *Missouri* is about 90% complete. The ship conducted successful Machinery Sea Trials on 28–30 January with Combat Systems Sea Trials scheduled in March and Acceptance Trials in April. Delivery will occur on Schedule in April. The ship is within budget.

The reactivation and modernization of *Wisconsin* is on an accelerated schedule. Advance Procurement Funds ($53.5M) have been authorized and appropriated. Contract Design has completed and Detail Design will complete in February. Long-lead equipment and material purchasing has begun. A draft Request for Proposal (RFP) was issued in November 1985, and a final RFP will be issued in March 1986. The balance of full funding (total $415.5M) has been appropriated but not authorized. Without authorization, accelerated schedule cannot be maintained. This will be a competitive procurement for a firm fixed price plus performance incentive contract, with work accomplishment required on the East or Gulf Coasts. If the Navy is authorized to proceed, contract award is expected in late FY 86.

AIRCRAFT CARRIER SERVICE LIFE EXTENSION PROGRAM

USS *Forrestal* completed service life extension last May and has now finished its series of tests and trials, and been returned to active service. USS *Independence*, the third aircraft carrier to enter SLEP, began a SLEP availability last April, at the Philadelphia Naval Shipyard. USS *Independence* will complete SLEP in February 1988.

Five other carriers are programmed for SLEP in future years: USS *Kitty Hawk*, USS *Constellation*, USS *Ranger*, USS *America*, and USS *John F. Kennedy*.

We are very pleased by the fine performance of USS *Saratoga*, which again shows that our carriers can continue to serve reliably when improved through the SLEP process.

In the FY 86 budget process, Congress required that the Navy alter the timing of our purchases of materials for aircraft carrier SLEP. Instead of purchasing equipment so it would be on site at the shipyard at the start of the availability, Congress has required that our budgets reflect purchases of equipment for delivery at the time of scheduled installation of the equipment. Our budgets now reflect that direction, calling for funds to support procurement schedules in accordance with shipyard need dates for the equipment.

NUCLEAR POWERED AIRCRAFT CARRIER NEW CONSTRUCTION

Delivery of USS *Theodore Roosevelt* will occur in 1986, ahead of schedule, and is now projected within budget. Carriers USS *Abraham Lincoln* and USS *George Washington* are on target for deliveries in 1989 and 1991, respectively.

AEGIS GUIDED MISSILE CRUISER

Congress has authorized 19 CG 47's, four of which have been commissioned. The class has already distinguished itself in the fleet. *Ticonderoga* (CG 47) provided needed air defense support for peacekeeping forces off Lebanon, and *Yorktown* (CG 48) provided the air intercept support for Navy fighters intercepting the airliner carrying the *Achille Lauro* highjackers. *Vincennes* (CG 49) successfully engaged the Navy's newest supersonic sea-skimming target, Vandal (ER), thus providing an important step in our ongoing effort to meet that threat. The fifth ship of the class, *Bunker Hill* (CG 52), will be commissioned later this year. The balance is at various stages of construction at Ingalls and Bath Iron Works. All are currently within budget and on schedule. Two cruisers, CG 66 and 67, are requested in the FY 87 budget.

Earlier, I discussed the benefits of competition in Aegis shipbuilding. In addition, a plan for developing second-source suppliers for the Aegis Weapon System is aggressively being executed. The Navy has already selected sources for the Aegis Fire Control Director and Transmitter components of the Aegis Fire Control System. Competition will start in FY 87. Selection of additional subsystem second sources is planned for FY 86 and 87.

Our second-source program has been ambitious, and has been subjected to many directed changes, including three additional competitions added this year. However, we are concerned about our ability to administer these new contracts because competition and second-sourcing have increased the program manager's contract administration load several fold while maintaining the steady production schedule necessary to support this high-priority shipbuilding program.

MINE COUNTERMEASURES (MCM) SHIP

The Mine Countermeasures (MCM) ship program has five ships under contract—three at Peterson Builders, Inc., and two at Marinette Marine Corp. The Navy reconfigured the MCM 1 and 2 contracts to cap the Government's liability; MCM 1 has been signed, and MCM 2 is yet to be signed.

The Navy has restructured the remaining nine ships of the MCM program into a three-ship award plan for each of the program years FY 85, FY 86, and FY 88. The previously planned FY 87 ships were moved to FY 88 due to the later-than-planned awards of the restructured program. This restructured program, with the cost growth funds ($97M appropriated in FY 86, but not authorized) will complete the MCM program Avenger, MCM 1, is to deliver this October. MCM 2 will deliver the following summer. MCM 3 and remaining ships will deliver starting in September 1987.

MINESWEEPER HUNTER (MSH) SHIP

Minesweeper Hunter (MSH) will be a new class of 17 coastal minehunters. The lead ship detail design and construction contract was competitively awarded as a fixed price incentive fee contract to Bell Aerospace Textron, New Orleans, LA, in November 1984. The contract contains fixed price options for four ships each in FY 86 and FY 87. The remaining eight ships will be competitively awarded in FY 88 and FY 89. The ship design was developed by Bell in an industry-wide design competition that stressed cost consciousness and encouraged innovation. The design chosen by the contractor incorporates surface effect ship technology, and glass-reinforced plastic structure based on proven Swedish technology. These unique features and the Mine Warfare ship requirements of low magnetic permeability, shock hardness, and noise attenuation have complicated the design process for Bell and resulted in higher shipbuilder's engineering cost and a delay in the construction and delivery of the lead ship. In support of this effort, a full-sized test section has been built and is being tested by Bell for noise and shock, as well as to debug and verify the production process.

The MSH 1 ship delivery date has been delayed seven months beyond the current contract date, to February 1988 in lieu of July 1987. The four option ships scheduled for award by April of 1986 will not be awarded until the Navy is thoroughly satisfied with the detail design.

"ARLEIGH BURKE" (DDG 51-CLASS) DESTROYER

The DDG 51-class is a shipbuilding program to maintain required force levels upon retirement of DDG 2 and DDG 37-class destroyers. Equipped with the Aegis Weapon System, DDG 51s will be the most modern, survivable, and capable destroyers in the world.

Congress appropriated funds for *Arleigh Burke,* the lead ship of the class, in FY 85. The lead ship contract was awarded to Bath Iron Works in April 1985. Recent milestones included the delivery of a SPY-1D Radar Engineering Development Model and initiation of the Combat System Land Based Test at the Combat Systems Engineering Development Site at Moorestown, NJ. The program is on schedule with delivery of *Arleigh Burke* scheduled for October 1989. Funding is requested for DDG 52, 53, and 54 in the FY 87 budget, marking the start of serial production of the class. Contracts for these ships will be competitively awarded. Current plans call for 29 destroyers to be built.

As directed in the FY 86 CRA report language, the Navy is continuing development of Racer for possible use on future ship construction programs.

SSN 688-CLASS ATTACK SUBMARINE

The SSN 688-class submarine construction program consists of 52 authorized ships, of which 48 are under contract or delivered, 27 to General Dynamics, Electric Boat Division, and 21 to Newport News Shipbuilding. Three ships were delivered in 1985, bringing the total number of SSN 688-class deliveries to 33. There are 15 SSN 688s under construction: 8 at Newport News, 7 at Electric Boat. Starting with FY 83, awards competition has been noticeably effective in reducing shipbuilder price and improving construction schedules. It will be used throughout the remainder of the program.

SSN 21-CLASS ATTACK SUBMARINE

Currently in Contract Design, SSN 21-class submarine, *Seawolf*, is designed to counter the rapidly increasing capabilities of the Soviet submarine force projected for the 1990s and beyond. *Seawolf* will be a quiet, fast, well-armed submarine with advanced sensors, capable of deploying to forward ocean areas to search out and destroy enemy submarines and surface ships and to attack land targets.

TRIDENT SUBMARINE

The *Ohio*-class (Trident) submarine program is progressing properly. Seven ships have been delivered, and six are under construction or authorized. The ships are currently projected to deliver ahead of their revised contract schedule, and within cost projections. These submarines have met or exceeded performance requirements. The first D5-capable submarine is scheduled to be delivered in December 1988.

LSD 41-CLASS LANDING SHIP DOCK

To date, the Congress has authorized and appropriated funds for eight LSD 41-class ships. The first ship of the class, USS *Whidbey Island* (LSD 41), completed her Post Shakedown Availability on 14 February 1986. USS *Germantown* (LSD 42) was delivered to the Navy by Lockheed Shipbuilding Company on 1 February 1986, subsequent to a warranty extension for the main propulsion engines invoked by the Navy in response to several casualties. At Lockheed, *Fort McHenry* (LSD 43) was launched on 1 February 1986 and is scheduled for delivery to the Navy on 15 June 1987.

The LSD 44 contract, awarded to Avondale Industries, Inc., was a competitive fixed price incentive contract with options for two ships each in FY 85 and FY 86. Avondale began construction of LSD 44 on 18 November 1985. The options with Avondale were exercised on 26 November 1984 for LSD 45 and 46 and on 11 December 1985 for LSD 47 and 48. Compared to the delivery dates presented to you in April 1984, a five-month delay on LSDs 44 through 48 is now estimated due to incorporation of a Collective Protective System to protect the ships from nuclear fallout and chemical and biological agents.

The five-year shipbuilding plan requests funding in FY 88 for a cargo-carrying variant of the LSD 41 that will be required to meet Marine Corps lift objectives by 1996.

LHD 1-CLASS AMPHIBIOUS ASSAULT SHIP

Construction of the lead ship started on 9 July 1984 and the keel was laid on 30 May 1985 at Ingalls Shipbuilding Division of Litton Systems, Inc. Delivery of USS *Wasp* (LHD 1) is scheduled for March 1989. On 7 June 1985, Ingalls was awarded a contract for LHD 2 long lead-time material with a lead yard service option.

Congress authorized a multiyear award in FY 86 for LHD 2, 3, and 4. The Request for Proposal was released 9 August 1985 and a competitive procurement is underway. The multiyear approach is expected to result in savings over an annual procurement approach.

LPD 4-CLASS AMPHIBIOUS TRANSPORT DOCK SERVICE LIFE EXTENSION PROGRAM (SLEP)

The first LPDs will reach the end of their 30-year service life in the mid-1990s. In order to retain the LPD capability into the 21st century, cost and feasibility studies for increasing the service life of the class from 30 to 45 years and for upgrading its capabilities were conducted and approved. With the extension of service life by 15 years, we also intend to upgrade auxiliary and support systems to provide appropriate capability for the extended Navy employment. The budget requests advanced procurement in FY 87 and FY 88 to enable SLEP of the lead ship in FY 89. SLEPs for the remaining ships of the class are planned, three per year, over the subsequent three years.

LANDING CRAFT, AIR CUSHION (LCAC)

Congress has authorized and appropriated funds for 33 air cushioned landing craft through FY 86. The first 12 LCACs are under contract to Bell Aerospace Textron. Bell Aerospace Textron delivered the first LCAC to the Navy in December 1984. That craft is currently in Post Shakedown Availability. The initial phase of operational testing (OT-IIIA) identified 38 specific discrepancies. Discrepancy analysis, system redesign, implementation and evaluation are ongoing. A cost growth of around $20 million is anticipated for the first 12 craft as a result of correcting these deficiencies. LCAC test reports indicate the craft can meet mission specifications, but improvements to reliability are necessary and steps are being taken to accomplish this. A second phase of operational testing (OT-IIIB) is scheduled for May 1986 with an expanded scope to validate OT-IIIA discrepancy correction.

A second-source builder, Lockheed Shipbuilding Company, has been selected and a contract to produce two FY 85 craft was awarded on 30 September 1985. Upon successful completion of OT-IIIB, the remaining FY 85 craft and twelve FY 86 craft will be competitively awarded during late summer 1986. The Navy has not requested funds for LCAC in the FY 87 budget because of the late award of FY 85 and FY 86 craft.

T-AKR FAST LOGISTIC SHIP

The T-AKRs, converted from the commercial SL-7s, are now designated as Fast Logistic Ships. They are maintained in a readiness state for employment and can project forces rapidly anywhere in the world. Procured in FY 82, seven of the eight ships have completed conversion to a partial roll-on/roll-off (RO/RO) capability. The eighth and final ship, USNS *Pollux* (T-AKR 290), presently undergoing conversion by Avondale Industries, Inc., is scheduled for delivery on 31 March 1986.

T-AVB AVIATION LOGISTICS SUPPORT SHIP

Modification of USNS WRIGHT (T-AVB 3) by Todd Shipyards Corporation, Galveston Division, proceeded on schedule during 1985 and delivery is scheduled for March 1986. An option for modification of USNS *Curtiss* (T-AVB 4) was exercised with Todd on 10 December 1985. These ships are intended to provide aviation maintenance support to a deployed Marine Corps Air Combat Element of a Marine Air/Ground Task Force.

T-ACS AUXILIARY CRANE SHIP

Modification of the second Auxiliary Crane Ship, S.S. *Gem State* (T-ACS 2), was completed by Continental Maritime of San Francisco, Inc., and the ship was delivered to the Navy on 31 October 1985. Dillingham Ship Repair was awarded a contract for conversion of S.S. *President Polk* to S.S. *Grand Canyon State* (T-ACS 3) on 13 September 1985. The FY 87 budget request contains funding for two more T-ACS conversions.

T-AGOS UNDERSEA SURVEILLANCE SHIP

The second flight of T-AGOS ships was awarded 5 April 1985 to Halter Marine, Inc., the first two ships in a potential buy of six. Construction of both of these vessels has started, and the keel of the first ship has been laid. Seven of the initial award of twelve ships to Tacoma Boatbuilding Company have delivered. The eighth ship was scheduled for delivery late in March 1986. Six of the seven delivered ships are now deployed in active status and have met every mission requirement.

As mentioned last year, Tacoma Boat is having financial difficulties. The January 1985 equity investment by Midland Capital Corp. failed to stabilize Tacoma Boat's financial situation, eventually causing the company to file for relief and protection under Chapter 11 of the U.S. Bankruptcy Law in September 1985. The company has continued to perform T-AGOS work at a reduced rate in anticipation of successfully reorganizing under Chapter 11. The Navy and Tacoma Boat unsuccessfully concluded negotiations on 14 February to complete this contract. The eighth ship is being removed from Takoma Boat in a nearly completed condition to be finished by a local shipbuilder. Completion or reprocurement of the four ships remaining in the contract is being resolved.

Design work is being completed on the Small Waterplane Area Twin Hull (SWATH) configuration T-AGOS. A shipbuilding contract award is anticipated for September 1986.

T-AO 187-CLASS FLEET OILERS

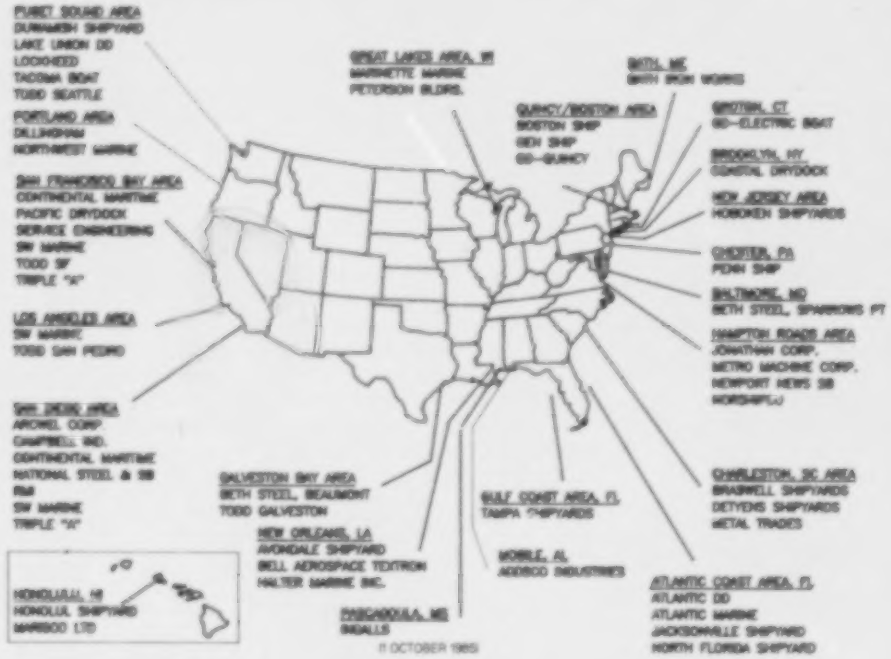
Contracts for the second flight of the T-AO 187-class fleet oilers were awarded in May and June 1985 to Pennsylvania Shipbuilding (two ships) an Avondale Shipbuilding (one ship). Options were exercised February 1986 for two FY 86 follow-on hulls, one each to Penn Ship and Avondale. The Navy holds options for two more ships in FY 87. A total of nine of these new class fleet oilers are now under contract.

Construction has started on the first five ships of the program. T-AO 187 was launched in October 1985 and the T-AO 188 in February 1986. This is slightly ahead of the planned schedule. There is a potential for early delivery of the first ship.

FLEET MODERNIZATION PROGRAM (FMP)

The Fleet Modernization Program has undergone major management transitions since FY 84 and has just completed its most successful year. The FY 85 program was the largest to date ($1.5 billion). It included accomplishment of over 3,000 major ship alterations in 233 ships and achieved a significant improvement in the accomplishment rate of the highest priority alterations. Among the major FY 85 installations were LAMPS III antisubmarine warfare helicopter capability, SM-2 missile, Tomahawk missile and close-in weapons system (CIWS) anti-ship missile defense in surface ships; BQQ-5 sonar and Tomahawk launch capability in submarines; and F/A-18 capability in one aircraft carrier.

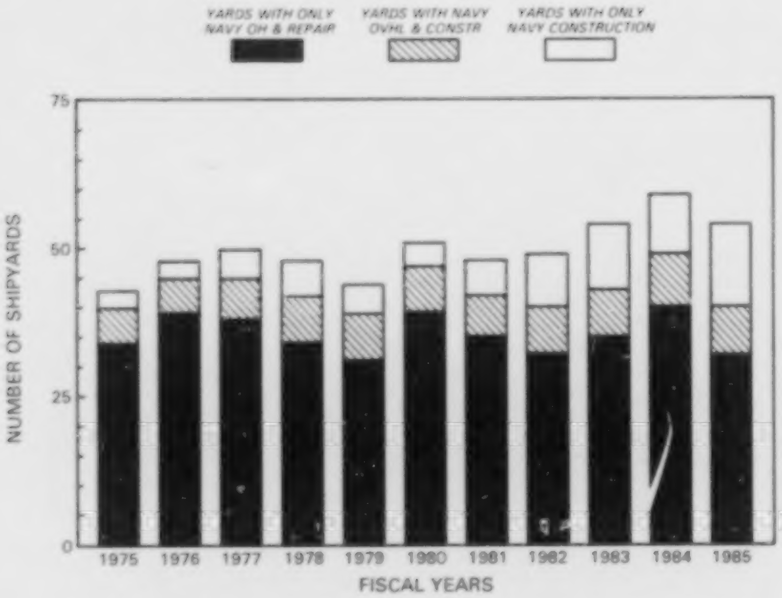
Warfighting Improvement Programs (WIP), which are being implemented for selected ship classes, will provide for still further improvement in the ship modernization process. WIPs tailor the ship modernization process to discreet improvements in warfighting capability keyed to the current and projected threat and packaged for most economic accomplishment. All alterations necessary to support the warfighting upgrades are packaged to provide for proper coordination among shipboard support requirements, such as power, air conditioning and stability.


PUGET SOUND AREA
DUWAMISH SHIPYARD
LAKE UNION DD
LOCKHEED
TACOMA BOAT
TODD SEATTLE
PORTLAND AREA
DILLINGHAM
NORTHWEST MARINE
SAN FRANCISCO BAY AREA
CONTINENTAL MARITIME
PACIFIC DRYDOCK
SERVICE ENGINEERING
SW MARINE
TODD SF
TRIPLE "A"
LOS ANGELES AREA
SW MARINE
TODD SAN PEDRO
SAN DIEGO AREA
ARCWEL CORP.
CAMPBELL IND.
CONTINENTAL MARITIME
NATIONAL STEEL & SB
RMI
SW MARINE
TRIPLE "A"
HONOLULU, HI
HONOLULU SHIPYARD
MARISCO LTD
GREAT LAKES AREA, WI
MARINETTE MARINE
PETERSON BLDRS.
QUINCY/BOSTON AREA
BOSTON SHIP
GEN SHIP
GD—QUINCY
BATH, ME
BATH IRON WORKS
GROTON, CT
GD—ELECTRIC BOAT
BROOKLYN, NY
COASTAL DRYDOCK
NEW JERSEY AREA
HOBOKEN SHIPYARDS
CHESTER, PA
PENN SHIP
BALTIMORE, MD
BETH STEEL, SPARROWS PT
HAMPTON ROADS AREA
JONATHAN CORP.
METRO MACHINE CORP.
NEWPORT NEWS SB
NORSHIPCO
CHARLESTON, SC AREA
BRASWELL SHIPYARDS
DETYENS SHIPYARDS
METAL TRADES
GALVESTON BAY AREA
BETH STEEL, BEAUMONT
TODD GALVESTON
NEW ORLEANS, LA
AVONDALE SHIPYARD
BELL AEROSPACE TEXTRON
HALTER MARINE INC.
PASCAGOULA, MS
INGALLS
GULF COAST AREA, FL
TAMPA SHIPYARDS
MOBILE, AL
ADDSCO INDUSTRIES
ATLANTIC COAST AREA, FL
ATLANTIC DD
ATLANTIC MARINE
JACKSONVILLE SHIPYARD
NORTH FLORIDA SHIPYARD
11 OCTOBER 1985

PRIVATE SHIPYARDS WITH NAVY SHIPWORK DURING FY 85
(SHIP CONSTRUCTION, OVERHAUL, AND REPAIR)
(54 SHIPYARDS)
CHART 4

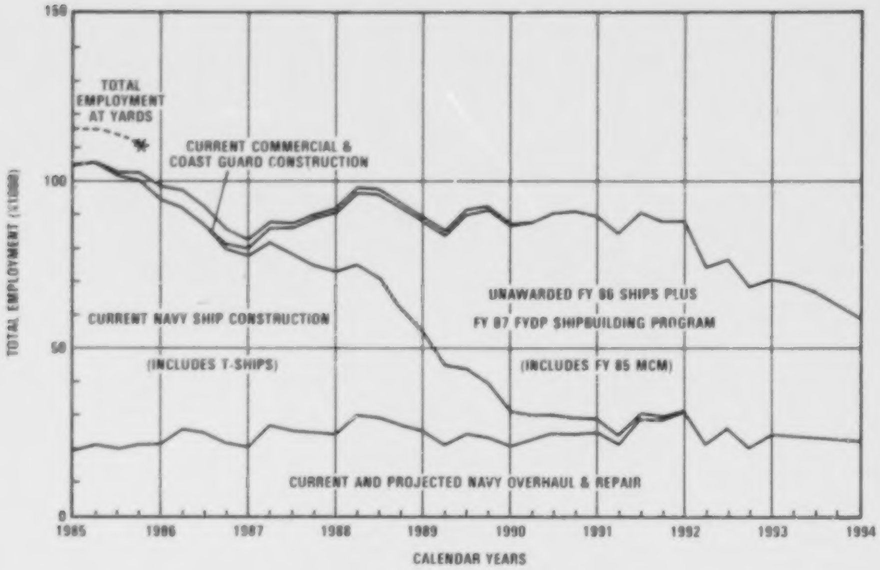
CAPACITY AND CAPABILITY OF PRIVATE INDUSTRY

The Navy's proposed five-year shipbuilding program includes 106 new construction ships and 20 ships to be converted or reactivated in FY 87 through FY 91. The capacity and capability of the industry are more than adequate to execute the Navy's program.



PRIVATE SHIPYARDS WITH NAVY SHIPWORK
NUMBER OF YARDS PER FISCAL YEAR
CHART 5

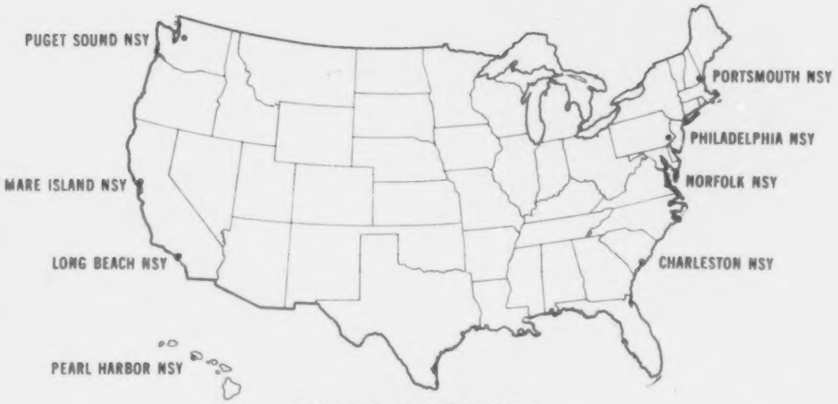
In FY 85, NAVSEA had construction and overhaul work performed in 54 different shipyards as shown in Chart 4. Chart 5 shows the breakdown of the yards with which NAVSEA has done overhaul, repair and construction business over the past decade. At the end of the first quarter of FY 86, 49 different private yards had performed Navy work. Fifteen of these 49 shipyards are involved only in Navy ship construction, 28 in Navy ship overhaul and repair, and 6 in both Navy ship construction and overhaul and repair.



PRIVATE SHIPYARDS WITH NAVY SHIPWORK
CURRENT AND POTENTIAL WORK
CHART 6

PROJECTED NAVY WORKLOAD FOR PRIVATE SHIPBUILDERS

Chart 6 depicts the Navy's forecast of employment in private sector shipyards resulting from current commercial ship construction, Navy ship construction, and Navy repair and overhaul. The projected ship construction work is derived from the Navy's FY 87 Five-Year Shipbuilding Program. As of October 1985, the total employment in the 54 yards that have performed Navy ship work in FY 85 was 111,000. Of these 111,000 employees, 21,000 were applied to Navy ship repair and overhaul, and 78,900 to Navy ship construction or conversion, with the balance of 11,100 being applied to commercial repair and other industrial work. In other words, 90 percent of these workers are employed on Navy contracts.



PUBLIC SHIPYARDS
CHART 7

STATUS OF PUBLIC SHIPYARDS

The Navy's depot maintenance capability is an essential part of the Fleet's readiness for war. It is made up of two components: the eight geographically dispersed Naval Shipyards shown in Chart 7, and the private sector shipyards that regularly perform Navy depot and maintenance and modernization work. Since 1967, the eight Naval Shipyards have done repair and modernization work exclusively. Six of these eight yards are qualified for the overhaul of nuclear-powered ships. One of the private sector shipyards is qualified to perform overhaul of nuclear-powered ships and another is expected to be in the business in the 1990s.

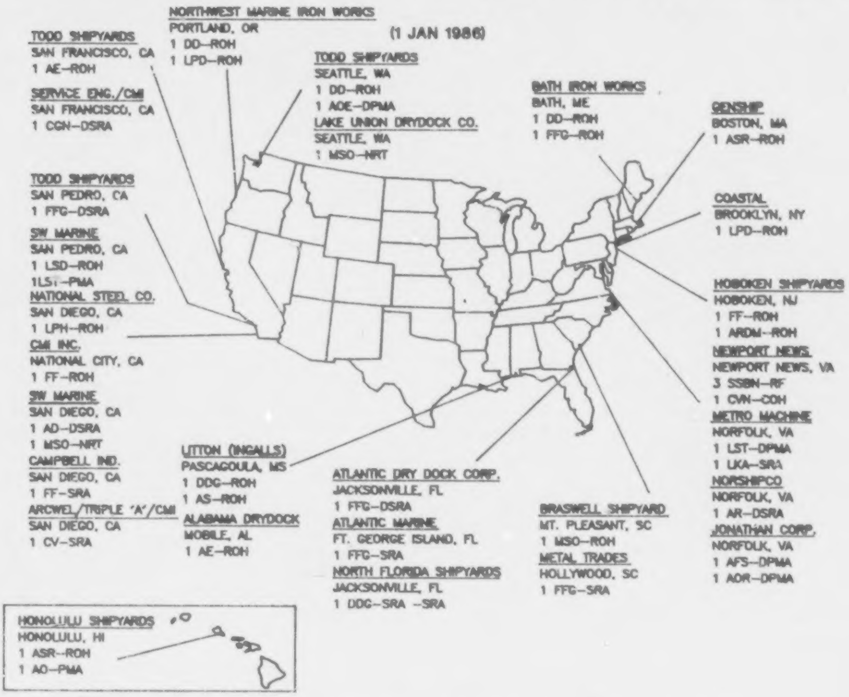
Throughout the past five years, the Naval Shipyards have concentrated on meeting schedule commitments and performing quality work on the Navy's most complex ships. This effort, although successful in meeting completion dates for ship repair work, is not always the most cost effective. Recent initiatives to improve efficiency in the Naval Shipyards have included a cost reduction goal to $500M in FY 87 and overtime limits. The objective of these initiatives is to improve efficiency while maintaining a level of output. We intend to produce the same degree of quality repairs but at a reduced cost. Cost reduction will be attained through management and production efficiencies.

The combined employment level of the eight public yards was 72,485 on 31 December 1985. This is a reduction from a total of over 75,000 in June 1985. It is expected that employment will be reduced to about 68,000 by the end of FY 86 to comply with the budget.

There has been a change in ship repair philosophy and class maintenance plans. We have moved away from Regular Overhauls (ROHs) to shorter, more frequent Phased Maintenance Availabilities (PMAs) and Selected Restricted Availabilities (SRAs) in less complicated ships. Since these smaller availabilities are provided to the private sector shipyards, the net effect has been and will continue to be the reduction of repair and overhaul workload for the Naval Shipyards. A balance is necessary between the need to maintain a shipbuilding and repair base in the private sector and the overall strategic importance and mission of the public shipyards. Both are needed for our defense preparedness.

There is a movement toward full and open competition between the private and public sector for the Navy's repair and overhaul work. This is intended to lower the cost of overhauling Navy Ships. Efficiency in the shipyards is largely dependent on a level workload which permits a level work force and maximum skill utilization. Large workload swings resulting from competition or other reasons adversely impact the ability to efficiently utilize manpower. Problems exist in private shipyards, but in Naval Shipyards the situation is exacerbated by Government personnel regulations. The Naval Shipyards do not have the flexibility to respond to the employment peaks and valleys that will develop and, as a result, inefficiencies will accrue.

Changes are needed in the way public shipyards are financially managed if they are to compete on the open market. No doubt the technical and labor skills are now available to accomplish quality repair work and complex overhauls. However, a new set of business methods and financial management are required if they are to compete in the free market. We must continue to balance our shipyard industrial base if we are to maintain and protect the strategic position of our public shipyards.


(1 JAN 1986)
NORTHWEST MARINE IRON WORKS
PORTLAND, OR
1 DD–ROH
1 LPD–ROH
TODD SHIPYARDS
SAN FRANCISCO, CA
1 AE–ROH
SERVICE ENG./CMI
SAN FRANCISCO, CA
1 CGN–DSRA
TODD SHIPYARDS
SEATTLE, WA
1 DD–ROH
1 AOE–DPMA
LAKE UNION DRYDOCK CO.
SEATTLE, WA
1 MSO–NRT
TODD SHIPYARDS
SAN PEDRO, CA
1 FFG–DSRA
SW MARINE
SAN PEDRO, CA
1 LSD–ROH
1LST–PMA
NATIONAL STEEL CO.
SAN DIEGO, CA
1 LPH–ROH
CMI INC.
NATIONAL CITY, CA
1 FF–ROH
SW MARINE
SAN DIEGO, CA
1 AD–DSRA
1 MSO–NRT
CAMPBELL IND.
SAN DIEGO, CA
1 FF–SRA
ARCWEL/TRIPLE 'A'/CMI
SAN DIEGO, CA
1 CV–SRA
LITTON (INGALLS)
PASCAGOULA, MS
1 DDG–ROH
1 AS–ROH
ALABAMA DRYDOCK
MOBILE, AL
1 AE–ROH
ATLANTIC DRY DOCK CORP.
JACKSONVILLE, FL
1 FFG–DSRA
ATLANTIC MARINE
FT. GEORGE ISLAND, FL
1 FFG–SRA
NORTH FLORIDA SHIPYARDS
JACKSONVILLE, FL
1 DDG–SRA –SRA
BRASWELL SHIPYARD
MT. PLEASANT, SC
1 MSO–ROH
METAL TRADES
HOLLYWOOD, SC
1 FFG–SRA
BATH IRON WORKS
BATH, ME
1 DD–ROH
1 FFG–ROH
GENSHIP
BOSTON, MA
1 ASR–ROH
COASTAL
BROOKLYN, NY
1 LPD–ROH
HOBOKEN SHIPYARDS
HOBOKEN, NJ
1 FF–ROH
1 ARDM–ROH
NEWPORT NEWS
NEWPORT NEWS, VA
3 SSBN–RF
1 CVN–COH
METRO MACHINE
NORFOLK, VA
1 LST–DPMA
1 LKA–SRA
NORSHIPCO
NORFOLK, VA
1 AR–DSRA
JONATHAN CORP.
NORFOLK, VA
1 AFS–DPMA
1 AOR–DPMA
HONOLULU SHIPYARDS
HONOLULU, HI
1 ASR–ROH
1 AO–PMA

PRIVATE SHIPYARDS WITH NAVY OVERHAUL AND REPAIR PROGRAMS
CHART 8

PRIVATE SECTOR OVERHAUL AND REPAIR

In 1985, 35.9 percent of the Navy's overhaul and repair business was performed in private shipyards. These shipyards employ approximately 21,000 people in the Navy overhaul program. Newport News Shipbuilding and Dry Dock Company is the only private shipyard that performs submarine overhaul and repair work, and as of November 1985, employed 7,500 people for this work. We intend to accomplish one submarine SRA at Electric Boat in FY 86 and two in FY 87. Of the 54 yards that did business with the Navy in FY 85, 39 performed overhaul and repair work only. As of 1 January 1986, 24 private yards were conducting overhaul and repair work only on Navy ships and another 5 yards were performing both overhaul and repair and new construction or conversion work. Chart 8 shows a distribution of the overhaul and repair work.

OVERHAUL WORK AND PUBLIC/PRIVATE COMPETITION

In FY 85, 58 ships were overhauled (55 active ships and 3 reserve). Thirty-one of these overhauls were performed in the private yards and 27 in public yards. The FY 86 program contains 46 Navy ship overhauls. This is a downward trend over the past years, from a high of 90 in FY 77 to 46 in FY 86 and 41 in FY 87.

Currently, more ships are being placed in engineered operating cycles and phased maintenance programs. These programs include our less complex ships and permit more frequent but shorter maintenance periods. They reduce the effort in bringing a ship back to Fleet fighting trim as is necessary with the longer overhauls. The net result is a reduction in the number of overhauls and a corresponding increase in the number of Selected Restricted Availabilities (SRAs). SRAs have increased from 103 in FY 85 to 129 planned in FY 87. Similarly, Phased Maintenance Availabilities (PMAs) have increased from 17 conducted in FY 85 to 48 planned in FY 87. Nearly all surface ship SRAs and PMAs are accomplished in the private sector. In FY 86 approximately 38% of overhaul and repairs is planned for the private sector. In FY 87, the private sector is projected to receive 43% of overhaul and repair. On a total dollar basis the amount of work going to the private sector increases from FY 85 to FY 86 and on into FY 87.

Half of the overhaul and repair work is on complex ships. Most of these ships have nuclear propulsion. Work on nuclear propulsion plants can be be done by the six Naval Shipyards and two private yards certified to perform this work.

As part of the overall effort to reduce costs, NAVSEA is conducting a two-ship pilot program which started in FY 85, to determine the benefits of competing ship repair and overhaul work between public and private shipyards. The approach will provide a comparison of costs and quality of performance. This will involve a thorough study of costs and quality after completion of the overhauls in Janaury 1987.

The pilot program consists of two Amphibious Transport Docks (LPD) homeported on the West Coast. Equivalent work packages were prepared for each ship. A coastwide solicitation for USS *Duluth* (LPD-6) was issued to both public and private shipyards. The USS *Duluth* has been awarded to Northwest Marine Iron Works of Portland, OR. Approximately 50 percent of the work has been completed. Consistent with our policy to have one ship in the public sector and one in the private, Long Beach Naval Shipyard will overhaul USS *Cleveland* (LPD 7) beginning this April. Technical and fiscal performance are being validated during the overhauls to ensure an equal basis for execution. Changes to the work package for each ship during the overhaul are being closely controlled so that the level of effort for each will remain essentially equivalent. Audits will be conducted to keep track of actual costs. The quality of work will also be monitored during performance. The Navy Board of Inspection and Survey, along with representatives of both the private and public shipyards, will conduct a final quality evaluation after the work has been completed.

When the overhauls are completed and all the data relating to cost and quality have been collected and analyzed, the private and public shipyard's performance will be compared by independent evaluators, assisted by representatives from all participants.

In FY 86, in response to Congressional direction for at least four ships to be competed between the public and private sectors, the competition has been expanded to include two ships on the East Coast and four on the West. USS *L.Y. Spear* (AS 36) and USS *Mahan* (DDG 42) are the East Coast candidates while USS *Albert David* (FF 1050), USS *O'Callahan* (FF 1051), USS *Fletcher* (DD 992) and USS *Fort Fisher* (LSD 40) are the West Coast candidates.

In addition, NAVSEA is currently competing submarine availabilities valued at approximately $890 million. SSBN overhauls, SSN selected restricted availabilities, and SSBN extended refit periods previously assigned on a sole source basis are now open to competition between public and private shipyards. The first availabilities to be competed are the SSBN 640 and 643 overhauls, which are scheduled to begin at the end of FY 86.

In summary, Mr. Chairman, I think our programs to complete building the 600-ship Navy are on track. Further, we have taken initiatives to ensure that this modern and expanded Fleet can be properly maintained well into the future. These initiatives are based on the concept that cost efficiency is best achieved through competition. With cost efficiency, there is an absolute need to maintain product quality and the requisite skill base to satisfy strategic requirements. This can only be accomplished through strong program management and engineering on the part of both the Navy and industry.

Increased competition has been complemented by a NAVSEA management posture that puts a great premium on cost savings, while continuing to recognize that high product quality can, in itself, minimize long-term maintenance and repair cost. We will continue to emphasize technical engineering excellence as a means of ensuring both product quality and cost efficiency. Together, these efforts will ensure the affordable maintenance of the Fleet we have worked so hard to build. They will ensure that the United States keeps the type of potent, balanced Naval Force needed to meet our global commitment and support a strong forward defense.

Mr. BENNETT. Thank you very much. We will now proceed to questions.

Mr. Spence, do you have any questions to ask?

Mr. **Spence**. The air cushion craft. What kind of problems are we experiencing with this vessel that would warrant the delay?

Admiral **Rowden**. We had several engineering problems with the LCAC, Mr. Spence. It associates itself with the angle drive of the engine to the propellers; with the bearing, a very large bearing on the bow thrusters; with the lube oil and hydraulic systems; and other smaller things of this nature.

About 4 months ago, I had the chief engineer in Navsea run a technical evaluation of the LCAC to find out where we were and what we ought to be doing. We've cleaned up all of those issues now, except the engine. The engine was placed on a test stand to run a 1,000-hour test at an accelerated or a heavy load pace. The engine ran for 680-odd hours and then had to be taken off the line because the power output, temperatures and things of that nature weren't holding up to what they should be.

We discovered when we tore down the engine that there was erosion in the engine between the rotors and the stators in the turbine of the engine, which has to be addressed. At the present time, we are negotiating with Bell-Halter to repair that particular part of the engine. At the same time, we had difficulty in meeting the operational test schedule, and we had to delay some of the operational tests, some parts of the operational test schedule, OT–III, not all of which have been completed yet. They will be completed in the spring of this year.

We felt, all told, with those kinds of things we needed to catch up, get ourselves properly organized to proceed forward in the program, and we felt that because of that, a 1-year hiatus would be best. Now, that doesn't in any way mean that we back away from the LCAC technically or operationally. We need the craft, we think that the design is proper; we just need to make sure that we've properly engineered it, and I think we're doing this in a responsible way.

Mr. **Spence**. I was going to say, is that going to mess with our balance from the standpoint of our capability to lift marines? We have other craft——

Admiral **Rowden**. We have other craft. Of course, we now have a great number of hull-borne craft, boats and that sort of thing that we're not throwing away. The landing craft air cushion provides a new dimension in our ability to conduct an assault, because it provides for the long-range high-speed insertion on the surface of the water. We of course have helicopter lift, also.

Mr. **Spence**. That will be all, Mr. Chairman.

Mr. **Bennett**. Now I will inquire, first of all about the Trident. The Navy budget requests over $1.5 billion for the 14th SSBN. I will ask you three questions at once. What would be the effect of a 1-year hiatus in the Trident building on Electric Boat? Would such a gap in construction have an effect on the attack submarine program? If a 1-year delay in Trident deliveries were incurred as a result of no authorization in 1987, what additional costs would be required to keep existing Poseidon submarines longer than now planned?

As you can see this is a budgetary-type question. Give us the alternatives.

Mr. PYATT. We have looked at various times in the past at a 1-year hiatus on Trident construction and basically conclude that it would be a manageable thing in the industrial part of the world.

Clearly there would be, at Electric Boat and some other suppliers, problems that would have to be solved and work force levels would fall and if you build it back up, it would have to be recreated and there are some costs involved there.

Mr. BENNETT. Have you made any estimates of that cost?

Mr. PYATT. No. They are hard to make and once you make them, it is hard to believe them. So we have not.

There is definitely something and it is really hard to sort your way through it. The main issue on Trident has always turned out to be that the Trident is such a fundamental element of the triad that it was always put in the budget again.

Mr. BENNETT. Next is the Aegis cruiser. The request for Aegis cruisers this year is for two instead of three. It appears that the unit cost of these ships will also increase this year and I am interested first, is the two-ship program the reason unit cost has gone up $100 million between last year and this year, and how does the Navy expect to generate competition in a cruiser program this year with only two ships to split between two yards? Is the plan to compete five ships?

Mr. PYATT. Let me address the competition issue and ask Admiral Rowden to address the cost issue.

We are trying to look at the cruisers and the DDG's as a group of ships, Aegis ships, and trying to match the industrial base for those classes of ships so that the competitive environment supports it. We think it is desirable to bring in a third source, even at the five-ship level. We plan to proceed along that path.

Then when we make the annual awards, look at them as a five-ship package to be sure that we do not overload one yard and underload somebody else so we have to consciously decide how to proceed.

They are different ships and the competition has to be conducted differently.

Mr. BENNETT. How about that element of the $100 million, Admiral Rowden.

Admiral ROWDEN. Yes, sir. The increase comes in two pieces, Mr. Chairman. One piece is about $60 million involved in the equipment for two training sites, one at the Naval Surface Warfare Laboratory at Dahlgren, VA, and the other one the test facility at Wallops Island.

These have previously been briefed to the Congress as requirements of the program and they happen to come in this year for funding. That is $60 million in each ship.

In addition to that, there is about $40 million per ship that associates itself with previously directed second-sourcing and competition that reveals itself now in the procurement this year. A total of $100 million per ship.

Mr. BENNETT. The Navy is seeking to develop second sources for Aegis, we know, and some instances, it appears that the second source is being developed on a sole-source basis. Is this still the case? If so, why?

Mr. PYATT. Yes, sir. Out of the appropriation process last year came the direction to pick second sources in the most expeditious manner. During the debate in both Houses about second-sourcing, the alternative of competition was raised, explored and discarded. So we came out with a clear understanding it was to be a directed second source, with the additional provisions that it not impact cost or schedule of the ships.

Mr. BENNETT. The law basically presumes competition, and that seems to me like you are doing something contrary to the law. How do you meet that?

Mr. PYATT. I do not believe so, sir.

Mr. BENNETT. You do not believe it is contrary to the law.

How about offering something for the record on that and doing it promptly because we would like to get on with this hearing.

Mr. PYATT. Yes, sir.

[The following information was received for the record:]

To the maximum extent possible, the Navy is using full and open competition to select sources for AEGIS Weapon System Components. Two selections have already been made on that basis and others are underway. In response to the fiscal year 1986 Appropriation Act we are also going to develop a second production test center and a second source for shipyard combat system integration by the most expeditious means available. These efforts will require a substantially more extensive facilitation, familiarization and qualification period. It appears that the urgency to make the congressionally mandated FY 88 deadline for competition with the existing source for these items will require directed sources.

Mr. BENNETT. That does worry me a bit.

Now, about the DDG-51: After initial authorization for one in fiscal year 1985 and none last fiscal year, this year's request seeks three ships for $2.5 billion.

What would be the effect of cutting one ship from this year's request? What would be the effect of delaying the program by a year, given the first ship is still on the drawing boards?

Mr. PYATT. I think the impact of dropping from 3 ships to 2 in the DDG would preclude the introduction of the third shipbuilder in this program. We plan to build a lot of these ships. We need to get competition in at the beginning.

Mr. BENNETT. I have exhausted my time and the next one to inquire is Mr. Dyson, who has left. Next, Mr. Bateman.

Mr. BATEMAN. Thank you, Mr. Chairman.

Might I clarify, if I may, Mr. Secretary, Admiral, the $60 million in the budget in association with the Aegis cruiser program is not shipbuilding construction, but meeting a scheduled training requirement.

Admiral ROWDEN. Yes, sir; that is right. For the purchase of equipment for training and combat system test requirements.

Mr. BATEMAN. Not this morning, but for future reference and general interest, the Navy's oceanographic vessels—I would like someone perhaps to visit me and discuss to what extent the Navy has any cooperative efforts with the oceanographic and marine institutes at the higher educational institutions in America and whether or not there is as much interplay as is consistent with the Navy's national security requirements for a broadened research effort. But that I would like to hold for another day.

The SLEP of the *Kitty Hawk* has been slid, if that is the right form of the verb, 1 year. Is that going to slide other SLEP's in the carrier program?

Mr. PYATT. No. I was trying to sit here and think through. No, it is still on the same schedule.

Mr. BATEMAN. Mr. Chairman, I have a number of other things but I do not think they are of the magnitude to take more time of the committee. They are items that I can discuss with the appropriate people from the Navy at a more convenient time to them and to the committee.

I thank the Chair.

Mr. BENNETT. Thank you.

Mr. Sisisky.

Mr. SISISKY. Thank you, Mr. Chairman.

Admiral Rowden, in your testimony you said in 1985, 35.9 percent of the Navy's overhaul and repair business was performed in private shipyards. What do you estimate for 1986?

Admiral ROWDEN. I believe, Mr. Sisisky, that the number is about 38. It is going up and I think the percentage is 38. I will check that, though, for the record.

[The following information was received for the record.]

PUBLIC/PRIVATE SHIPYARDS

The percentage of total workload (ship maintenance and modernization) dollars going to the private sector in FY 1986 is 32.6 percent. Additionally, 10.1 percent of the total workload dollars is to be competed between the public and private sectors.

Mr. SISISKY. Are you bidding these out now? Private versus public yards?

Admiral ROWDEN. We have just started the private-versus-public yard competition in two areas. The Congress directed that we run a pilot program, which we did last year, on two landing ships. We awarded one of those landing ships, the U.S.S. *Duluth,* to Northwest Marine Ironworks in Portland, OR, in the latter part of 1985.

Another ship, U.S.S. *Cleveland,* is to be awarded to the Long Beach Naval Shipyard permitting a competition or a determination of performance between the public and the private sector in these ships, which are very similar overhauls.

In addition to that, at the present time, we have a competitive overhaul effort going on between the Charleston Naval Shipyard and Newport News Shipbuilding & Drydock Co. for the overhaul of the SSBN-640. That will be awarded later on this year.

Mr. SISISKY. OK. Is it the Navy's plan to force a shift in work from public to private yards by: First, making public shipyards include the cost of paying for civil service retirement's unfunded liability; second, by not separating capability and mobilization costs, or third, by not considering the amount of low-balling—and I think this GAO report that came out last week, which I have not seen yet, I just saw in the press—done by private yards doing the bid process. There were three items in there. Would you like to comment on that.

Mr. PYATT. Let's go over some of them.

In making the cost comparisons and the way it occurred in the west coast competition last year, costs that we tend to call mobilization costs or not directly related with putting out the work are carved aside and set aside. We carry those as an overhead item for mobilization.

There are other things in a shipyard that have drifted there one way or another that are not directly related. There are overhead items and those also we have attempted to carve out.

The issue on civilian retirement costs and those comparisons, as I recall it, are conducted consistently with A-76 competitions. They are included.

The issue on low-balling; I would like to point out that we do have cases where Navy shipyards have overrun their budgets and have had to eat it. That could be categorized as low-balling, too.

There are two low-balling reports. One, the GAO did, and one that we did and submitted to all of the committees, including this one. That, I think, is also a reflection that in some areas of the country, there is a very intense competition and the fear of losing business drives prices excessively low and then begins the process of the businessman trying to stay in business and us trying to protect ourselves, just like you do with your car dealer.

So problems exist, but I would like to point out that while we did not make a study of Navy yards, sometimes I wish that we had thrown the Navy yard data in there. I think it would be kind of indistinguishable.

Mr. SISISKY. But you do not know that for certain. I would like to see what low-balling is on the public yards.

Mr. PYATT. Yes.

Mr. SISISKY. When you say they eat it——

Mr. PYATT. They pass it on into next year's rate. That is the reason we are putting so much emphasis and tried to describe in various committees——

Mr. SISISKY. It would be interesting to see that figure, if you have it, and compare it to the private sector.

Mr. Chairman, I have got a whole group of questions here. I still have a little bit of time and I really want to ask a question which pertains to public yards.

Admiral, what do you anticipate the total end-strength of public yard personnel by the end of the calendar year 1986 and 1987, and what will the impact be on public shipyards? Will it require any shipyards to close, in your estimation?

Admiral ROWDEN. I do not believe, in our estimate now that it will require any shipyard to close. The end-strength of the shipyard is dependent upon the amount of work, of course, that the shipyard either wins or is assigned. At the present time, work is assigned.

At the end of calendar year 1985, the level of personnel in the shipyards was 73,000. We project by the end of next year that we will be in the neighborhood of about 68,500, and I will get these numbers exactly for you.

[The following information was received for the record:]

PUBLIC/PRIVATE SHIPYARDS

At the end of the calendar year 1985 the actual level of personnel in the public shipyards was 72,948. The budgeted end-strengths for FY 86 and FY 87 are 68,409 and 65,734 respectively.

We feel that in the following year, we will come down to about 65,800 and the following year, around 65,500. That is about the way the draw-down appears.

We expect to do that, incidentally, mostly through attrition and we believe we can do that.

Mr. SISISKY. I will submit these questions to you and would appreciate an answer for the record.

[The following questions were submitted to the witness to be answered for the record:]

PUBLIC/PRIVATE SHIPYARDS

Mr. SISISKY. Is it the Navy's plan to force a shift in work from public to private shipyards by:

a. making public shipyards include the cost of paying for Civil Service retirement's unfunded liability;

b. by not separating capability and mobilization costs; or

c. by not considering the amount of "low-balling" done by private yards during the bid process?

Admiral ROWDEN. No. The Navy is not trying to force a shift of work to either the public or private shipyards. The public/private competition is a test program to encourage cost savings and improve performance in both public and private shipyards in order to reduce the cost of ship maintenance and modernization.

The Naval shipyards will not have to use stabilized rates in pricing work under competition. Certain costs not associated with the ship work will be excluded from those rates. We have other ongoing efforts to force price realism by the private sector.

Mr. SISISKY. What do you anticipate the total end-strength of public yard personnel will be by the end of Calendar Years 1986 and 1987?

Admiral ROWDEN. Calendar year projections are difficult and less meaningful than the fiscal year planned end-strengths because of the emphasis in the budget cycle on the end of fiscal year employment levels. Planned end-strength for FY 1986 is 68,409 and 65,734 in FY 1987.

Mr. SISISKY. What will the impact be on public shipyards?

Admiral ROWDEN. The impact will be improved cost performance within budget.

Mr. SISISKY. It is my understanding that a recent Fleet Depot Maintenance Scheduling Conference projected that the Public/Private Shipyard split would be 63 percent/37 percent during FY 1986, but change to 49 percent/51 percent for FY 1987. My sources tell me that this was detailed in something called "Program Objective Memorandum No. 88." Could you comment on this?

Admiral ROWDEN. Since some of the ships will be awarded based on the public/private competition test program, the percentage split of work between the public and private sector cannot be stated at this time. Our current projections for public, private, and competition ships are:

[In percent]

Area	Fiscal year—	
	1986	1987
Public	57.3	53.0
Private	32.6	33.6
Competition	10.1	13.4
Total	100.0	100.0

Mr. SISISKY. My understanding is that competitive bid factors such as the "stabilized man-day rate for House and Hotel Service Support" make it almost impossible for Naval Shipyards to compete with private shipyards for competitive bids. Could you comment on that and outline whatever steps you may be taking to ensure that competitive bidding is equitable?

Admiral ROWDEN. The Naval shipyards will not have to use the stabilized man-day rates when pricing work under competition with private shipyards. Certain rates are being refined to include only ship work related costs.

Mr. SISISKY. Are there plans to initiate a Navy contract with Coopers & Lybrand to implement the recommendations outlined in their study of ways to improve Naval Industrial Fund Activities? If so, could you outline the costs of the project and specify where the money comes from.

Admiral ROWDEN. The Secretary of the Navy plans to implement selected recommendations outlined in the Coopers and Lybrand review of Naval Industrial Fund Activities. A contract has not been awarded at this time; costs have yet to be determined. When awarded, costs will be paid for by the benefiting activities.

Mr. SISISKY. Are initiatives such as the hiring freeze and overtime limits designed to force work from public yards into private yards?

Admiral ROWDEN. No. These initiatives are designed to decrease the cost of operations in the public shipyards.

Mr. SISISKY. Are you taking steps to ensure that scheduling pressures are lifted from Naval Shipyards in order to ensure that cost factors become the paramount concern?

Admiral ROWDEN. We expect the Naval shipyards to deliver ships on schedule, but we are scheduling the overhaul durations for the shipyards' most effective working tempo and are taking other actions to reduce costs.

Mr. SISISKY. Could you outline the steps you are taking in this area?

Admiral ROWDEN. We have taken several actions such as significantly reducing overtime and balancing the workforce with the budgeted work. Additionally, we are reducing overhead and improving the accuracy of labor charging. Each shipyard is currently pursuing a tailored plan to reduce costs.

Mr. SISISKY. Are there any plans to initiate a government contract which would provide for private sector management of a public shipyard (such as Bath managing Portsmouth)?

Admiral ROWDEN. There are no plans to provide for private sector management of a public shipyard.

Mr. BENNETT. Mr. Ortiz.

Mr. ORTIZ. Thank you.

Mr. Secretary, I am glad you touched on a little problem that we have that is very, very dear to me and to the people of south Texas. As you are aware, the continuing resolution for fiscal year 1986 funded reactivation of the battleship *Wisconsin* at $469 million and only $53.5 million of which was authorized. The fiscal year 1986 Authorization Act authorized the use of shipbuilding savings from 1986 and prior years for the battleship reactivation program.

The continuing resolution effectively blocked this by earmarking this shipbuilding savings for other purposes. Nonetheless, Secretary Weinberger, in his recent posture statement, says that the DOD plans to use prior-year shipbuilding savings for battleship reactivation.

Does the Navy see some way around this dilemma without the Congress having to authorize the over $400 million for the battleship? Is there something new that maybe we need to know this morning that maybe you could help us out with?

Mr. PYATT. If I had any ideas of how to solve the problem, I would not have presented it as a dilemma in my opening remarks. All of the ways that I thought it was solvable have been effectively foreclosed.

If the views on appropriated/unauthorized continue as strong as they are, we cannot reprogram. One idea was to reprogram new money into that account, take the old money out and then we conform with the authorization. The appropriations side will not listen to it for a second. So I am stuck in the middle.

It is clear to me that in both bills, the Congress as a whole voted to allow the battleship, but I cannot execute. I do not know how. Something has to give someplace.

Mr. ORTIZ. I appreciate the chairman, Mr. Bennett, who has been working very hard with me to try to reach a solution or do something with it, but what happens if we cannot reach a solution or an agreement, do you see a delay?

Mr. PYATT. Oh, yes, because we are only authorized to spend the $53 million long lead. We had, until now and after the authorization bill of last year, said, well, it looks like if we can find the money, we can proceed and so we put together an acquisition process that would result in a shipyard award late this fiscal year.

We are on that track, but if we do not get the money resolved, we are going to have to stop. It is that simple.

Mr. ORTIZ. Still this happens to be—correct me if I am wrong—this happens to be one of the top priorities of the Navy, the surface action group for the gulf coast. Am I correct in saying that?

Mr. PYATT. If we did not want to solve the problem, I would not be bringing it up today. We want to solve the problem.

Mr. ORTIZ. I can assure you that at least from this member here, I know we are going to work with you.

Mr. BENNETT. There are some bills coming down the pike we could put it on. One of them is the mariner bill and the other one is a personnel bill which we could attach it to. So there are several bills we could attach the language to. We need the precise language, however, and if you could give us precise language that you recommend, that would be helpful.

Mr. PYATT. We can draft some and give it to you, yes, sir.

Mr. ORTIZ. Thank you very much for your assistance.

I have no further questions.

Mr. BENNETT. Mr. Bustamante.

Mr. BUSTAMANTE. Thank you, Mr. Chairman.

Mr. Secretary, let me say, and some of the members were there this morning, I have been overwhelmed by figures this morning and I guess you constantly have figures thrown at you.

But I was told this morning—some of the figures that were given to us—the possibility of a $240 billion 1987 budget for the defense area. That is about, what, minus $70 billion. We were looking at a $311 billion, $240, that leaves about—that is a minus $70 billion.

The Navy would take a cut of about $25 billion from the $104 billion that we are asking for the Navy. Now $11 billion, I understand, is for shipbuilding? What happens if these figures do come into being come October 1 this year? What happens to shipbuilding? Why are the things that we can expect in some of the outlays and some of the authorizations that will be made?

Can you give me some idea?

Mr. PYATT. I think the question evolves around an assumption that the mandatory sequestration occurs. It is the administration's view that this need not occur and so we really have not spent any time on trying to sort through the actual impacts. I really cannot answer your question.

Mr. BUSTAMANTE. I have heard Secretary Weinberger and, of course, Secretary Lehman say, well, it is not going to happen, but one of the things, Mr. Chairman, that I am concerned about, suppose it does happen. You know how the committees are working now and the Members of Congress and all we hear about is a deadlock and sequestration will take place or might take place. Some of these things kind of bother me when, you know, I look at some of the things that we have got ongoing, especially in the shipbuilding area.

You talked about shifting of funds, buy equipment, buy ships. What happened to personnel, then?

Mr. ORTIZ. Will the gentleman yield?

Mr. BUSTAMANTE. Yes.

Mr. ORTIZ. This goes back to the same question where there is a lot of confusion because, as I stated before, on the statement where Weinberger said, "We can go back and use some of the money," and then you come here and say it cannot be done. There is confusion all around.

Mr. PYATT. I can talk about the battleship. I have studied it carefully. The other issues that you have raised, I really cannot talk about in an informed manner and I would prefer not to unless I have had time to think it through.

Mr. BUSTAMANTE. Thank you, Mr. Chairman.

Mr. BENNETT. We appreciate your candor and when you are able to give more help, do it.

Mr. Hunter is next.

Mr. HUNTER. Thank you, Mr. Chairman.

Gentlemen, thank you for being with us this morning. Vice Admiral Metcalf, it was a pleasure being with you at the Naval Institute seminar in Coronado recently.

I have a couple of questions. A question I have asked and tried to have answered, a fairly simple question, for a long time now and I have gotten insufficient answers or really no answers at all, Secretary Pyatt, from yourself or from Under Secretary of the Navy Goodrich, of whom I have asked the same question. That is very simply, what is the real man-day rate for public shipyards and for private shipyards?

In talking with both of you in informal conversations, your statements have been to the effect that you think that counting the retirement costs and things like that, probably the private sector is less expensive. When I have asked you to send over some figures on it, I have gotten a one-page piece of paper with no heading on it with really man-day rates that are lower than the private sector. I have had exactly the same experience with Under Secretary Goodrich.

Now, I understand that there are a number of factors when the Navy builds what it considers to be a real man-day rate for public shipyard that it takes into consideration. One is accelerated labor rates, including wages, pension-related costs, aggregate benefits, annual leave, sick leave, health insurance, life insurance and projected raises during the availability of ships in the shipyard.

Two is overhead, including production support, which is direct support of waterfront activities and general support, including—which means support from the entire shipyard. Material and other factors is a third factor and factors can include the fast payback which fall under the ACP, asset capitalization program, broken down into three categories, equipment, minor construction, MIS, management information services.

I just wondered if you could provide for me—I understand you will be back at another hearing here shortly—what you folks have on your books as a real man-day in the public shipyard, and in talking very frankly with Under Secretary Goodrich, I said, I have figured this up and I have come up with something close to $500 for a man-day, which is considerably more than the $306 that I had sent down to my office. He said, "Well, actually, the figures I have seen are around $450."

Those are the figures that I want. Those that are around $450 per man-day, and I understand they do exist.

Mr. **Pyatt**. We cannot always guarantee to give you the numbers that you want because—we will give you the data, but I cannot guarantee you what the data will show. The issue that we got, and Mr. Sisisky got into a part of it, we are dissatisfied with the costs in the Navy shipyards and have taken actions during the past year to try to reduce those costs.

One of the formulas that we are applying is more competition. That works in the private sector and should work there.

Mr. **Hunter**. Mr. Secretary, sorry, but let me interrupt you for a minute.

Mr. **Pyatt**. OK.

Mr. **Hunter**. I am interested in listening to your policy statements. What I am talking about now is the simple transfer of information from you folks to me. Now I know that you have—at least according to what the Secretary has told me—you have done a compilation here where you have used accelerated labor rates, overhead, material and other factors and you have a figure at the bottom of that page.

Mr. **Pyatt**. Right. We have a figure that the budget is made for and we will provide that in the record of this hearing.

Mr. **Hunter**. That is what I would like to have. And if you could bring it to the next hearing and be prepared to talk about those factors, maybe Mr. Sisisky and I could have a good discussion concerning which ones maybe in the future should be countered or should not be countered.

Mr. **Pyatt**. Sure, be glad to do that.

Mr. **Hunter**. That is all I am talking about.

Mr. **Pyatt**. OK, fine.

[The following information was received for the record:]

FISCAL YEAR 1986 AND FISCAL YEAR 1987 NAVAL SHIPYARD MAN-DAY RATES

The following tables list the naval shipyard man-day rates for FY 86 and FY 87. The FY 86 man-day rates have been adjusted to exclude the 5% pay reduction which was proposed but not implemented. The FY 87 rates include a 5% pay reduction.

Naval shipyard	Labor	Overhead		Total
		Nonlabor	Asset capit	
Fiscal year 1986:				
Portsmouth	218.47	43.67	26.29	288.43
Philadelphia	208.73	83.53	22.29	314.55
Norfolk	216.41	60.01	23.34	308.76

Naval shipyard	Labor	Overhead		Total
		Nonlabor	Asset capit	
Charleston	233.50	63.49	30.65	327.64
Long Beach	224.97	90.32	29.79	345.08
Mare Island	272.26	58.42	25.77	356.45
Puget Sound	237.90	40.58	24.92	303.40
Pearl Harbor	279.43	76.10	31.27	386.80
Fiscal year 1987:				
Portsmouth	210.28	46.27	27.93	284.48
Philadelphia	200.90	87.08	32.10	320.08
Norfolk	208.29	72.23	34.04	314.56
Charleston	224.74	66.76	37.22	326.72
Long Beach	216.53	93.92	35.55	346.00
Mare Island	262.05	61.23	32.88	356.16
Puget Sound	228.98	42.42	30.20	301.60
Pearl Harbor	268.95	80.06	30.51	379.52

Mr. HUNTER. I appreciate that.

The other thing I would like to ask, and Admiral Metcalf, we had a chance to talk about it briefly, but it is concerning the basic point defense system. An amendment was passed by the full House requiring the Navy to not remove those systems until a report was submitted and to very closely analyze the effect of the report. Just so the committee is up to speed on this thing, the basic point defense system is the longer range engagement system up to 8,000, 12,000 yards, and the close-in weapons system that we are putting on is the 2,000-yard defense system for incoming missiles.

I understood that you folks were taking those off and an amendment was passed by the full House saying don't do it until we have this report in. As I understand, the report is not yet in and as you may have guessed from my conversation in Coronado, I would like to keep those on because at present we do not have the RAM. Essentially we have got an infantryman out there, he has got a good .45 that we are putting on him, but he does not have any rifle. Even though the rifle might not be effective from your point of view, it is the only one he has right now.

I am still very troubled by what I understand is your decision to go ahead and the fact that they are going ahead before the report is in to rip those long-range basic point defense systems off of two LHA's.

I will submit another longer question for the record if I could, but if you could comment on it.

Admiral METCALF. Sure. I think it is charitable to say, that we have not covered ourselves with glory in the way we have handled this thing.

I think also there was not any intent to obfuscate or to deceive. We briefed your staff and the briefers had bum information. If it makes you feel any better, I had the same information they had. They briefed me the same way they briefed you.

In other words, we were betting as to what the outcome would be in the report that we are going to submit to the Congress.

We felt that the outcome would be that we could take off the BPDMS from LHA's 4 and 5. We believed that the report would justify that. We so briefed your staff.

At issue was an inclining experiment. You were briefed that the inclining experiment had not been done when, in fact, it had been done. A moot point, in that we will not know what the results of those new inclining experiments are until some time in July.

Because the ships are in the shipyard we had to fish or cut bait. We stood to lose a good deal of money or be unable to either put the CIWS on or take the BPDMS off. We felt that we had to make a decision. That is why we did what we did. If we did not do it, we would not be able to do the right thing. We felt this would be justified in the report to the Congress.

Now those are the facts of the matter and I acknowledge that we could have done it in a little less messy fashion.

Mr. HUNTER. Have you taken them off yet?

Admiral METCALF. Yes.

Mr. HUNTER. If I could just finish that subject, and I will not ask——

Mr. BENNETT. We have the next round to go through. Go ahead.

Mr. HUNTER. Did you take them off?

Admiral METCALF. Yes; it is my understanding we have, sir.

Mr. HUNTER. OK.

Admiral METCALF. I will correct the record if that is not so.

[COMMITTEE NOTE.—The following information was received later: Both BPDMS have been removed from LHA-5. One BPDMS has been disconnected but not removed from LHA-4. The second BPDMS is still in place.]

Mr. BENNETT. At this point, we have completed in the open session everything I wanted to do in the open session, so we will now go into executive session for the next round of questions.

[Whereupon, at 10:35 a.m., the subcommittee proceeded to executive session.]

Mr. BENNETT. All right, we will continue now and we are now on a second round of questions.

I would like to ask you a little bit about T-AGOS. After last year's authorization, Navy announced its intention to build one of the T-AGOS ships using this SWATH [small waterplane area twin hull] form.

In light of the Gramm-Rudman-Hollings reductions in fiscal year 1986, is the Navy still planning to go ahead with the SWATH for one of the 1986 T-AGOS ships? That is the first question.

Second question. Are any of this year's ships to be SWATH ships?

Third question. Why is the unit cost of these ships predicted to increase next year from $50 million to about $65 million, and then finally, what is the financial health of the builder, which I understand is bankruptcy, of most of the T-AGOS ships? What will be the effect of that?

Will they be able to deliver the remaining ships they have under contract? Will this go to whoever purchases the facilities at the bankruptcy sale, if there is a bankruptcy sale, which I understand is possible?

In light of the reductions in fiscal budget authority, is the Navy still planning to go ahead with the SWATH?

Mr. PYATT. Are we now on executive session?

Mr. BENNETT. Yes, sir; we are.

Mr. PYATT. The first T-AGOS ships completed have been very successful ships. They have operated well and I think you have probably been briefed on some on the results of some of the operations. [Deleted.] So, in thinking about the best way to proceed to improving future surveillance, we start looking at SWATH, which was an American idea that the Japanese picked up and proceeded to do something with.

The main advantage of this hull form is better stability in rough water. So we combined the technology of better stability with the mission, and it made sense.

However, we wanted to explore it carefully and not stack up too many ships; so we decided to build only one ship in fiscal year 1986 of this hull form, fiscal year 1987 ships would be the monohull form that is currently in construction.

That is our plan.

Mr. BENNETT. What is the cost pushup? Why was that?

Mr. PYATT. The cost pushup, we will have to furnish for the record because I think it is related to training equipment, but I am speculating. We will have to furnish it for the record.

[The following information was received for the record:]

The cost of one monohull TAGOS in FY 86 is about $50M. We will know the cost more precisely after we renegotiate the option price from two to only one FY 86 ship with Halter Marine. The average unit cost of the three monohull TAGOS we asked for in FY 87 is slightly more than $49.3M. Originally the average unit cost for the two monohull TAGOS appropriated in FY 85 was $64.2M. Competition among shipbuilders and the success of the President's national economic program have brought the current estimate for FY 85 TAGOS monohull average unit cost down to $55M. We anticipated that the average unit cost for the three Small Waterplane Area Twin Hull (SWATH) TAGOS in FY 88 will be about $65M based on current estimates. We expect the SWATH configuration to cost more than the monohull because the hull geometry that gives the SWATH seakeeping benefits requires more ship volume and weight which will increase costs. Also, the FY 88 SWATH-TAGOS are early in the learning curve which would make them more costly than the last of the 18 monohull ships. With competition for the lead ship and prospects for a stable production program for these low cost ships, we might see costs come in lower than our current estimates for the FY 88 SWATH ships. We will have more precise estimates for the FY 88 ships in next year's budget after we have awarded the lead ship construction contract this year.

Mr. BENNETT. What is going to happen about this financial problem with Tacoma Boat?

Mr. PYATT. We have been working on this for over a year. A year ago, people thought we would get no ships at all out of the contract. We now have seven delivered and the eighth almost finished. Along the way, we picked up a bond on their performance. The bond is now paying off, the company has been in chapter 11, and last night, I understand that they completed the next action and quit.

We now have to pick up the pieces and see where we go from here.

There is another firm building the next lot of ships. We have existing options with that firm that are very attractive. It is clear that we own all the material that is in the Tacoma facility and it probably makes sense to transfer some of that material to another yard. We may decide to rebid the whole thing. We have not been through all the strategic aspects of looking at it.

Mr. BENNETT. Mr. Spence.

Mr. SPENCE. I do not have any questions.

Mr. BENNETT. Mr. Sisisky.

Mr. SISISKY. Didn't we drop the minesweepers out in the last couple of years?

Mr. PYATT. No, sir.

Mr. SISISKY. We have built the minesweepers?

Mr. PYATT. We are building; we have not finished any.

Mr. SISISKY. I thought two ships were deleted last year.

Mr. SCHAFER. Two fell out during the conference. We had four in the committee bill.

Mr. PYATT. Two years ago, not last year, year before last.

Mr. SISISKY. Last year, also.

Mr. PYATT. OK.

Mr. SISISKY. The reason I ask the question, I asked the Secretary that question and it seemed that is a Navy line because I had a discussion with Admiral Hays last week about strategic homeporting and the ability of the Soviet Union to mine our harbors, so we want to split up the amount of harbors we have. So isn't it strange that the only ships that seem to drop out, if that is a critical problem, are minesweepers?

What is the problem with the minesweepers? If it is such a critical program to strategic homeport, then why is it not a priority for the Navy?

I ask that in all honesty and sincerity. I cannot figure it out.

Mr. PYATT. We try to program them and we keep them in program execution but failure to make schedules, and now we are talking about cost increases, has put a lot more agony into keeping those ships in the program than any other ship class.

On the appropriations side, we went after them pretty hard and it turned out that some of our optimism proved unwarranted and so our credibility has also suffered along the way.

We want the ships. We like to build them, but two firms trying to build them are not having very good luck. They were not helped very much by the naval architect they had. The Navy did not shower glory upon itself, even to the extent of allowing an engine that turned the wrong way to going to the machinery plant.

It has been a total embarrassment. We want the ships.

Mr. SISISKY. You understand, I have a difficult time when we talk about strategic homeporting. If the problem is mining these harbors, then we have nothing. It just seems that the priority of the Navy is not in those ships. I am not the great advocate like Mr. Hartnett is, but I could see the need for the ships. We authorize the things and then appropriations knocks them out.

But it seems that somebody is trading something somewhere in dollars.

Mr. PYATT. No. You have not seen me going around banging on doors on the appropriations side to get them back in. I have done it. Then we come up with execution problems and they say, "That guy, Pyatt, is crazy; he does not know what he is talking about." That is an embarrassment.

Admiral Rowden, you may have additional comments.

Admiral ROWDEN. We have taken some measures, Mr. Sisisky. We have replaced the staff in the program management office from the top and some down in. I would not mean to infer that they were totally laggard in that operation, but we needed some new blood.

We put a new Supervisor of Shipbuilding on the scene out in Sturgeon Bay where the ships are being built to jack up the operation. We have not paid proper attention to our engineering. That caused the problem in the engine that we had.

So now we are paying more attention, and I think that from a technical standpoint, we are starting to get a grip on the thing. We now need to get the production out of the two yards.

Mr. SISISKY. In my problem, as I have related to the Secretary, not only do I sit here, but I also sit on other subcommittees, Military Construction. I look at those $60 million little pieces come in in phase I and $100 million here and $200 million there, and I say, is the Navy really serious about strategic homeporting or is it just something they are doing to pacify somebody, and I have got to worry. We have got a $10 billion military construction budget, $9.9 billion. I hate to tell you what we have got to cut.

The best case is going to be $2 billion that we have to cut that budget. The worst case will be $2.7 billion out of a $10 billion budget.

So I look at every part of that thing and then I look at strategic homeporting and look at these dollars there and I say, "Well, that is a place," and I don't want to be anti-Navy, because I know I get pictured that way.

I cannot honestly—you know, when I look at the—if the argument in strategic homeporting is over mining harbors, certainly that makes sense, I have no argument about that. If that is the case, then I have got a real difficult problem getting it in my mind why my other committee should authorize that money if we are not doing something to protect the harbors that we have.

Then I come to another thing with matters overseas and that is air defense. Our bases overseas are absolutely void of any air defense. I am telling you, it is a worrisome thing. We have got some people—it is coming out of the Congress, believe it or not—by one of the members of this committee that seems to be an advocate of air defense and everybody readily admits that our air defense capabilities in some of these places are horrible. Not only the Navy, I am telling you the Air Force, all of them, so, you know, I have got a difficult problem.

We cannot even protect those and then we have got to worry about protecting these.

Mr. PYATT. I think you also might view that in the strategic homeporting, spreading the assets around is a defense in itself and makes the mining job harder. That is part of it, too.

Mr. SISISKY. I understand that, but we can make it a lot harder.

Mr. PYATT. Given our track record, I think I have more confidence in our ability to build buildings in a homeport than our ability to build these ships.

Mr. SISISKY. You do not really mean that.

Mr. PYATT. I mean, based on the record.

Mr. SISISKY. I do not think you really want that quoted.

I just wanted to express myself with the problems that I have got.

Mr. PYATT. I am also expressing my frustration.

Mr. **Bennett**. Before we go to Mr. Bateman, the MSH-1 ship delivery date has been delayed 7 months beyond the current contract date from 1987 to 1988.

The four option ships scheduled for award in 1986 will not be awarded until the Navy is thoroughly satisfied with the design. In view of this, is it still prudent for the committee to authorize the four MSH ships as requested, the small minesweepers?

Admiral **Rowden**. I believe it is, Mr. Chairman, but let me speak just a little bit on where we are in that particular program.

The contractor has not performed well technically. And this is sort of an add-on to our last discussion; the contractor has not performed as well as he should have in the construction of that ship. He has not had the proper engineering staff and he has not managed his program very well.

We have done an engineering audit of his program. There are a number of difficulties. We believe that we have the contractor's attention on his performance for those ships now.

The shock test of a representative hull section was not part of the contract. Bell did this under their independent research and development program. This is a fiberglass ship, as you probably know—a different type of construction, a more modern type of construction, and one that, frankly, we need to explore and employ in this country.

He built a hull section to be shocked, to determine whether or not it would stand the shock that might be associated with minesweeping operations. He conducted shock tests on that section and the results have not been very good.

Now, we do not have all of the data—the tests were fairly recent, within the last several weeks. We do not have all of the data now on those tests, so we are not absolutely sure what needs to be done to the hull in order to make it proper for those ships.

At the present time, though, I see no reason to stop the program or to interrupt the program. If there is a reason, be assured that we will come to you directly on that.

Mr. **Bennett**. Mr. Bateman.

Mr. **Bateman**. No questions.

Mr. **Bennett**. Mr. Hunter.

Mr. **Hunter**. Thank you, Mr. Chairman.

Gentlemen, let me talk about something we talked about at the Institute recently and the forum in San Diego that I think should be of some concern. That is, we talked about the [deleted] and the fact that we are going to have to be able to effectively enlarge our stand-off distance to put up with Soviet Kirov and Kara class missile cruisers. I think their [deleted].

And we talked a little bit about RPV's. That was brought up by the moderator, to be able to go out, to be the eyes for ordnance that would be delivered off the ship, either ship-to-ship or ordnance from aircraft that are with the battle group.

Basically, the ability to stand out to see people, to see platforms a long way out from the battle group and destroy them a long way out from the battle group before they can effectively engage the battle group.

We talked about RPV's. They are aircraft, unmanned, that would go out. They would be able to extend our eyes a little bit further. I think also some members of the staff have told me they were thinking perhaps of using balloons at some point that would be essentially outposts.

One question that I have is concerning small craft. Would it not make a little sense to start, if we could do it without spending a lot of money, use SES's or any other type of a fast ship, small ship, perhaps with an eye toward the future of even perhaps not having them manned? For example, [deleted] where they [deleted].

If it would be wise to do that, is there a chance we could get a few started and just slap them out there? I think nothing tests equipment like actually getting it out with the battle group and trying to make it work. Could we construct some ships along this line and see if we can, in fact, push that standout distance out? Maybe even by providing on some of the bigger ones a helicopter platform or maybe a few Harpoon or Tomahawk missiles with an active radar?

Admiral METCALF. Mr. Hunter, the need for a standoff reconnaissance vehicle certainly is a vital requirement. We have taken a look at whether it should be with remote-controlled airplanes or a surface craft.

The nods come down on a better way to do it would be with an RPV, which is an airplane. The problem with small craft is that you would need a lot of them to get the same area of coverage. I mean, one RPV would give you an enormous area of coverage relative to a small craft. After all, the small craft is down on the surface of the water and [deleted]. But the real problem is how do you control and retrieve these craft? You have to do it in an open oceanway and the time you would want it would probably be when the weather is the worst and the darned things would give you a real seakeeping problem.

We generally have come to the conclusion that the best way to do it is with a remotely piloted vehicle, an airplane of some sort.

Mr. HUNTER. The only problem I have with that is if you used ships, and that is why I would suggest that you get a few of them and bounce them out there with carrier groups and see if they present unmanageable problems, but if you have craft, actual surface craft, they are capable of doing a few things.

If they are big enough, they can land a helicopter which gives that——

Admiral METCALF. Well, then they are manned.

Mr. HUNTER. But you could also put some weapons on it. In the future, you could have some ships—if you had a ship-to-ship Tomahawk, for example, or Harpoon on a craft that could rapidly get out to [deleted] from the battle group, you could—I think you would have a chance of effectively expanding that standoff distance, which we have got to do if we are going to keep our carriers from dying.

In the future, we are going to have a hell of a problem especially if those [deleted] on them.

Admiral METCALF. I guess I am less alarmed about the SSN-19's perhaps than you are.

We have PHM's which we designed to do exactly what you are talking about. We have in studies right now surface effect ships which will also do the kinds of things that you are talking about. They tend to be larger and manned, rather than unmanned.

In fact, as one of the options that we are looking at in the future is a frigate-sized SES and perhaps smaller, along the lines of exactly what you are talking about. So we do have those sorts of things under consideration.

To build them right now in this particular budget climate would be very, very difficult because they come under the "nice to have" rather than "essential."

Mr. BENNETT. I have one other question to ask.

Would it not be more cost-effective to buy the remaining Aegis cruisers at four to five a year and then shift to the DDG-51? Would that not be a cost-effective thing?

Am I making myself clear to you? In other words, would it not be more cost-effective to buy the remaining Aegis cruisers at a rate of four to five a year and then shift to buying the others?

It is a question of saving money.

Admiral ROWDEN. I just do not know, Mr. Chairman. We would have to look at that. It would seem intuitively that if you would buy one kind of ship, buy it out at the rate of five a year, that ought to be a more economical way to buy ships than it would be to buy two kinds at the rate of five a year.

Mr. BENNETT. You have got to look at it to see whether we can save some money that way.

Admiral ROWDEN. We have—I do not know that we have any statistics on that, but let me offer a couple of things. The combat system which is roughly the same between the two would be my guess is, pretty much of a wash on it. So really what you are talking about, would you gain economically in building the hull? Now, they both are gas turbine-powered—they are different hulls, of course, and there might be some savings there, but it would be my guess that it would be relatively small, quite frankly.

Mr. BENNETT. I see.

Are there any other questions before we adjourn? We are going to adjourn until 9 a.m. tomorrow.

Mr. HUNTER. Could I just ask one brief question?

Mr. BENNETT. Yes.

Mr. HUNTER. Just one thing that I hope, Mr. Pyatt, I made my request clear on this information. On all the Navy's figures, on their way that they have of figuring man-days, including all the elements that we have talked about and the last thing, Admiral Metcalf, I would like to pursue this basic point defense system a little further. I understand it was against the law to remove those things until a report was in. And apparently the Navy went ahead and pulled some. It is tough to put the Navy in jail.

I would like to pursue it. I think it is important for you folks and for us.

Thank you.

Mr. BENNETT. The staff have one or two questions they would like to ask.

Mr. CAVAIOLA. That year's request on the HUD seeks long lead funding for the two ships projected in the 5-year plan. What are the savings associated with providing 2 years' worth of advance procurement for the LHD program this year, and I guess the opposite of that would be, would there be any significant program effects of cutting the fiscal year 1989 long lead portion of that request?

Mr. PYATT. We put together the estimate based on the Navy's best understanding of ship construction profile. However, it is under competition now, contractors may approach it differently and there may be something that has to be reflected from that knowledge. I do not know whether that information comes in on a schedule consistent with yours. Without that, we have done the best job we know how for the multiyear program.

Mr. CAVAIOLA. Turning to the LPD-4 SLEP, there is $23 million requested in long lead funding for that program, although the SLEP, as I understand it, is not to begin until fiscal year 1989. Why is long lead funding requested 2 years in advance for that program?

Admiral ROWDEN. As I recall, it is because of the length of the SLEP. In order to get the material there that is needed, it has to be ordered that far in advance because of the length of the SLEP, which I recall, is 14 months. To fit it all together and not cause delays, which are expensive, of course, that is the reason why the long lead materials are required that early.

Mr. HUNTER. Which SLEP is that?

Mr. CAVAIOLA. This is the LPD-4, the amphibious transport dock.

Mr. SCHAFER. The question concerns multiyear procurement and there are several multiyear procurements proposed.

The legislation that sets up the framework for multiyear procurement requires a finding that funding is stable and that the program basically is stable before a multiyear contract is entered into.

In an environment where the Congress has passed, with the President's support, a Gramm-Rudman bill, how could you, Mr. Pyatt, make a finding that there is funding and program stability? Is your answer dependent in some way upon the court decision on Gramm-Rudman?

Mr. PYATT. Mr. Schafer, of all the people I know on the Hill, you are the expert on Gramm-Rudman. You are the only guy who had been consistently right in the interpretation and the way it has evolved.

If you think I am going to answer that question, you are crazy. [Laughter.]

Mr. BENNETT. On that happy note, we will adjourn until 9 a.m. tomorrow.

[Whereupon, at 11 a.m., the subcommittee was adjourned, to reconvene at 9 a.m., Thursday, February 20, 1986.]

SUBMARINE PROGRAMS

House of Representatives,
Committee on Armed Services,
Seapower and Strategic and
Critical Materials Subcommittee,
Washington, DC, Thursday, February 20, 1986.

The subcommittee met, pursuant to call, at 9 a.m., in room 2212, Rayburn House Office Building, Hon. Charles E. Bennett (chairman of the subcommittee) presiding.

STATEMENT OF HON. CHARLES E. BENNETT, A REPRESENTATIVE FROM FLORIDA, CHAIRMAN, SEAPOWER AND STRATEGIC AND CRITICAL MATERIALS SUBCOMMITTEE

Mr. Bennett. The committee will come to order and go immediately into executive session. Everybody here has been cleared.

Today, the subcommittee continues its authorization hearings, concentrating on submarine programs. This year's submarine request includes the 14th Trident submarine, four additional *Los Angeles*-class attack submarines, and the first long lead money for the next generation attack submarine, the SSN-21, or *Seawolf,* as it is now called.

The subcommittee is interested in a number of submarine related issues this year. First among these is the vitality of the combat systems that are supposed to go on board our new subs. Repeated difficulties with the Subacs system have caused the Navy to change the program around drastically, and we are concerned about the Navy's ability to match submarine delivery schedules with the new combat systems emerging from the program change. The subcommittee also remains keenly interested in the progress toward the *Seawolf,* including new design changes and their effect on combat capability. Finally, the subcommittee needs to understand the submariner's point of view of the torpedo and weapons programs that we must authorize this year.

Mr. Spence, do you wish to make a statement?

Mr. Spence. No thank you.

Mr. Bennett. Appearing before the subcommittee today is Vice Adm. Bruce DeMars, the new Deputy Chief of Naval Operations for Submarine Warfare, who relieved Vice Admiral Thunman late last year. Also coming before us today are Rear Admirals James G. Reynolds and Guy Curtis, of the Naval Sea Systems Command, who will address the submarine combat systems.

Admiral DeMars, you may proceed.

STATEMENTS OF VICE ADM. BRUCE DeMARS, DEPUTY CHIEF OF NAVAL OPERATIONS FOR SUBMARINE WARFARE, DEPARTMENT OF THE NAVY; REAR ADM. J.G. REYNOLDS, DIRECTOR, SUBMARINE COMBAT PROJECT NAVAL SEA SYSTEMS COMMAND, DEPARTMENT OF THE NAVY; REAR ADM. GUY CURTIS, DIRECTOR, ATTACK SUBMARINE ACQUISITION PROGRAM, NAVAL SEA SYSTEMS COMMAND, DEPARTMENT OF THE NAVY

Admiral DEMARS. Mr. Chairman, thank you. I am honored to be here today and I have a prepared statement I would offer for the record.

Mr. BENNETT. Without objection, we will put it in the record.

Admiral DEMARS. Thank you. I have a classified briefing. The message I would like to give you is:

SUBMARINE WARFARE

First, our strategic submarine force is in good shape.

Second, our people situation is good and improving.

Third, our attack submarine programs are well melded together. This is absolutely important to counter the Soviets, who are continuing their quest for submarine superiority.

The key to my discussion is submarine superiority, what it means to the country, and the fact that we are at a critical juncture right now:

First, a brief minute on submarine superiority. It is something we have enjoyed for a long time, certainly since the end of World War II. For a period of time we somewhat took it for granted. It allows us to exercise the key role in national objectives.

The hatched area here shows where our strategic missile submarines have patrolled and will patrol some 40 million square miles of ocean. They are this country's leading, most secure strategic deterrent.

Similarly, the dark blue arrows show our attack submarine force can always play a key role. They are ready today to get underway on short notice and proceed to anywhere in the world, waiting to exercise a decisive effect should hostilities break out. The fact that the Soviets know that we can do this acts as a deterrent. If this deterrent should fail, these submarines are trained, equipped, and ready to exact a high price on the Soviet Navy.

STRATEGIC SUBMARINES

10% OF NAVY BUDGET

The strategic submarine force is a real bargain. [Deleted] 10 percent of the Navy's budget. Truly a very, very significant bargain for the country. When we talk generically about the cost of things, I think that we normally dwell on procurement costs. In many cases we should also look at the cost of ownership in the long run. I think this is a case where we clearly have a bargain for the country.

Mr. SPENCE. Is this secret?

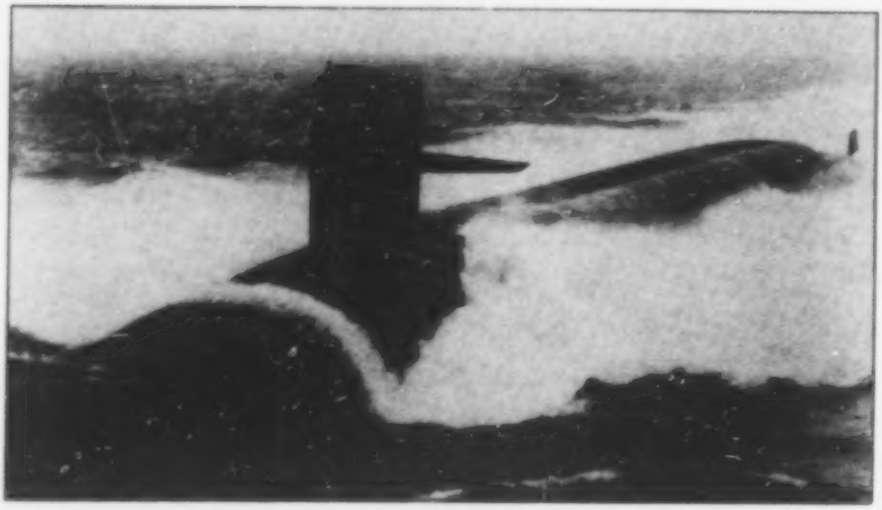
Admiral DEMARS. It is secret. It is secret because we [deleted]. I can declassify that and it is in my unclassified statement.

Mr. BENNETT. That would be helpful.

Admiral DEMARS. Fifty percent of the strategic warheads in this Nation's inventory are maintained by 10 percent of the Navy's budget.

TRIDENT SUBMARINES

- EXCEED DESIGN GOALS
- UNDER COST
- AHEAD OF SCHEDULE



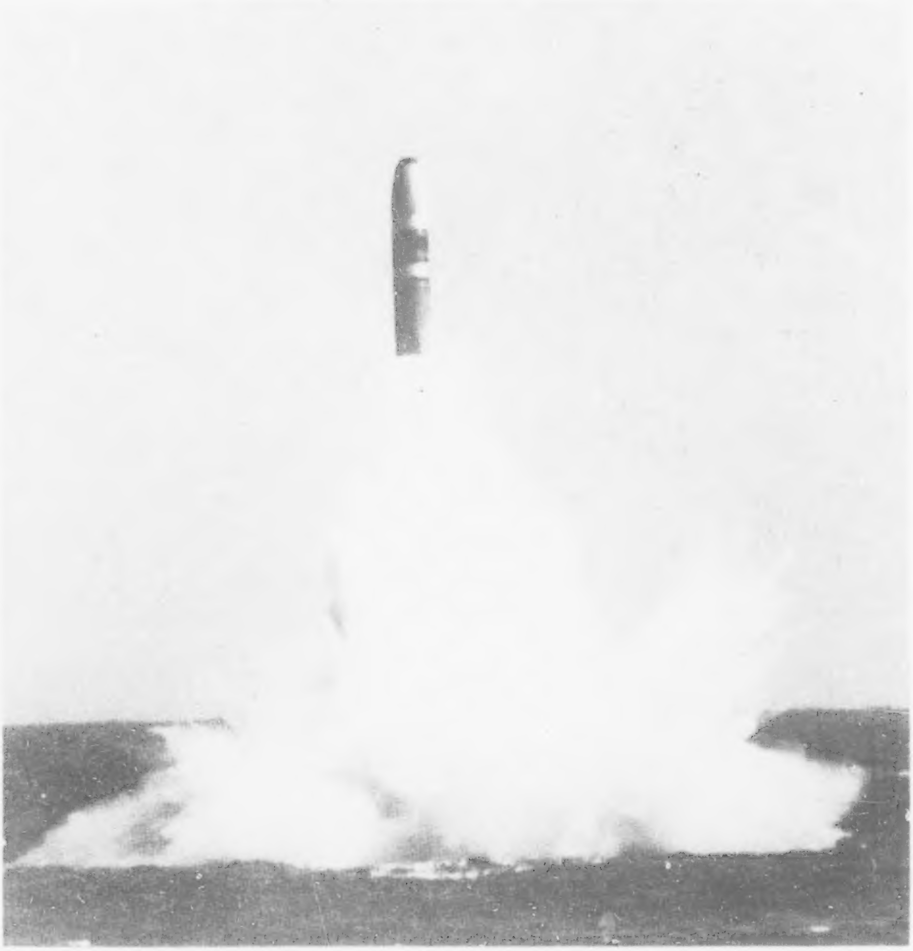
The Trident submarine came into force very well, almost without a ripple. These subs, of course, have exceeded the design goals. They are faster than they were designed to be, quieter then their design specifications and we are delivering them under cost and ahead of schedule.

The *Alaska* was delivered in January, 13 weeks ahead of schedule, and the *Nevada* will deliver this summer, 90 days ahead of schedule. A very, very effective program.

EIDON SUBMARINES
2400 PATROLS

As you mentioned, Mr. Chairman, we have the 14th Trident in the budget request this year. Our Poseidon submarines have continued to serve well for the past 25-plus years with over 2,400 deterrent patrols. They remain a very reliable, secure part of our strategic triad as they are slowly being replaced by Trident submarines.

TRIDENT I MISSILE



The Trident II missile will deploy with the Trident II submarine, and is the centerpiece of the Nation's Strategic Modernization Program. This is a picture, of course, of the Trident I missile which now is at sea. The Trident II is in the third year of full scale development. We plan to begin flight tests in 1987. The Trident I has had 42 consecutive successful launches. That is an extremely important, impressive record. That number is unclassified also. Forty-two consecutive successful launches.

We have money in the fiscal year 1987 request to begin flight tests in 1987 to allow load out and deployment on the initial submarine with the Trident II missiles in 1989.

This picture shows nothing but a beautiful sunset because that tells you what you see when you go looking for our strategic submarines. I know many times newspapers carry stories that the oceans are turning transparent, but in fact, the more we understand the problem, the more difficult it is becoming to find our submarines.

I run, as you know, the SSBN Security Program, which is adequately funded this year in the request. This program looks at the physics of how to find submarines, and we continue to learn that it is only becoming more difficult.

Mr. BENNETT. You are saying there that the evidence we received a year or so ago [deleted]. We had some studies [deleted].

Admiral DEMARS. Yes sir. In direct answer to the question, that whole thing put in perspective [deleted]. It is always possible to detect subs, if one can set up a specific set of conditions, [deleted].

Mr. BENNETT. I sort of felt like when I heard that testimony [deleted]. I guess what you are saying to me now is that that gut feeling of a faith in the situation is well justified, [deleted].

Admiral DEMARS. Yes. [deleted].

The argument normally comes down to the fact that scientists cannot model the ocean very well. Because submarines are undetectable in the real world, the models should predict this but frequently do not. So it is very much a scientific argument. I think that it is important that we recognize that the argument is much broader than detection, but normally the discussion focuses just on the detection mechanism. If you look at the submarine survivability issue as a whole, today we have [deleted] strategic submarines at sea on [deleted] patrol. In times of advanced crisis, we would have [deleted] strategic submarines at sea throughout the world in that 40 million square miles I talked about. Forty million square miles is a lot of space.

The ability of the Soviets, if they had the detection capability, to detect a sufficient number of these submarines, localize them, accurately attack them, have the weapons work then kill the submarines relatively simultaneously nearly is an impossible task. Since they can't get to first base right now, because they can't detect us, it is a very impossible task. We continue to study the problem because it is very important to the defense of the country.

ATTACK SUBMARINE SUPERIORITY

Shifting now to the attack submarine area, I would like, as I said before, to start the discussion with attack submarine superiority. As I mentioned, it is something we have enjoyed since World War II. It allows us to be able to work our will underwater virtually anywhere in the world, and at the end, I am going to show you a short 5-minute clip of what attack submarine superiority means at sea this very minute.

There are a number of lists that one could draw of what submarine superiority depends upon. This is a list I have chosen. I would like briefly to talk through a number of these. In the people area, we are in good shape now and our situation continues to improve. As you know, the submarine force is a very small organization (less than 10 percent of the Navy), very highly skilled, and requires careful management. The Navy has done that over the years with the very close cooperation of the Congress, and has managed a force which has grown from 1 nuclear submarine to more than 130 nuclear submarines, some of them with two crews. We have always been able to man that force.

It does require careful management. Right now our enlisted retention is good, at or above the fleet average. Officer accessions into the program are adequate for our requirements. Officer retention is good. About 50 percent. We continue to have a shortage of senior grade officers, senior lieutenant commanders through captain, because of the inadequate retention in past years.

With continued proper management of our programs we are working our way out of this situation.

The Congress helped materially last year in the 1986 appropriation through enhancements to the nuclear officer incentive pay and submarine pay, targeted specifically at these more senior officers. So I think this area is on track.

We are confident that we have the best weapons in the world in the submarine business. Our MK-48 is the best antisubmarine warfare torpedo in the world. We test it regularly in the exercise mode, and a number of times a year we fire it through full sequence to explosion. Yesterday the U.S.S. *Permit* in the Pacific successfully carried out what we call a service weapons test against a target. We are very confident we have a good weapon.

We are introducing [deleted] the advanced capability MK-48 torpedo, which is designed to counter the quieter Soviet submarines [deleted].

In the weapons area we feel we have a strong technological edge.

Similarly, in the sonar area, we have strong technology. We feel we will retain the superiority edge in that area.

We will always be outnumbered. We generally—it depends on what kind of submarines you count on both sides—are outnumbered about three to one. They will probably always have a numbers edge. However, if we keep the quality up, we can, and have overcome the quantity mismatch.

Now, I would like to spend more time in the areas of speed and depth because I think there is a lot of misinformation that exists in these areas. I will then spend some time on a very important area, quieting. I will begin with speed.

This is a chart [deleted] that shows the speed of the modern day Soviet submarines [deleted]. These are the modern submarines the Soviets are building today, *Akula* (the latest one), *Mike, Sierra, Oscar* and *Victor*. I put on here the *Alfa,* which is an old submarine, first built in 1969. In general it is the one that is referred to when discussing the Soviets high-speed submarines [deleted].

Mr. BENNETT. They tell me they are producing five different types at the present time.

Admiral DEMARS. Yes, sir. We will get into that in more detail later. The Soviets have continued to build many new classes of submarines for a number of years.

Mr. BENNETT. I was interested at this point in the type rather than the quantity.

Admiral DEMARS. Yes, sir; I will go into that in more detail in just a moment.

The *Alfa* is an old submarine. [Deleted.]

It is really not a front line submarine. If you look at the speed of today's SSN-688 class that are being built and that are at sea today, we see a favorable comparison. [Deleted.]

More important than top speed is the concept of tactical speed. That is the speed at which we can listen on our sonars to detect the target, track him and launch a weapon. [Deleted] when they are attempting to search. We can travel slightly above [deleted]. So we have almost [deleted] the tactical speed of the Soviets, a very, very important consideration.

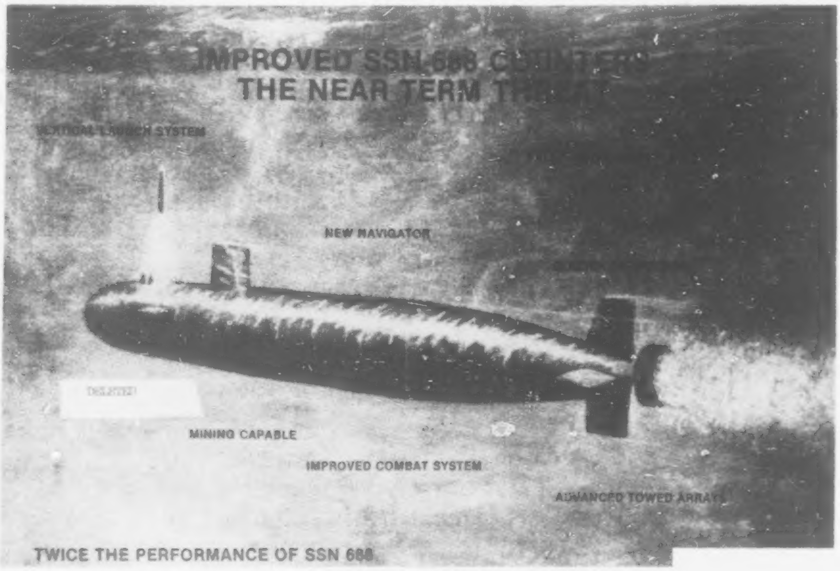
A similar misconception exists in the depth area. This VuGraph is a plot of depth, blue for the United States, red for the Soviets, [deleted]. The submarines that we are building today, the SSN-688 class submarines, operate with a maximum [deleted]. We would like to have a little more depth for maneuvering capability and we are building that into the new *Seawolf*.

The submarines that the Soviets are building today are capable of operating [deleted] the submarines the Soviets have today, [deleted].

More importantly, is where we operate our submarines normally. Because of our confidence in our submarine design and in our trained operators at sea, we normally operate to the full range of our depth capability. Whenever the tactical situation calls for it, we have no compunction about going down [deleted] and operating there for a couple of weeks on end if necessary. [Deleted.] It is a big deal for the Soviets to operate there. [Deleted.]

The submarine must be considered in the context of an entire weapons system. That brings the weapons into play. If we look at the depth capabilities of weapons, today's MK-48 torpedo, shown in blue, goes all the way down [deleted] that could operate down that deep. The advanced capability MK-48 torpedo that will come on line [deleted].

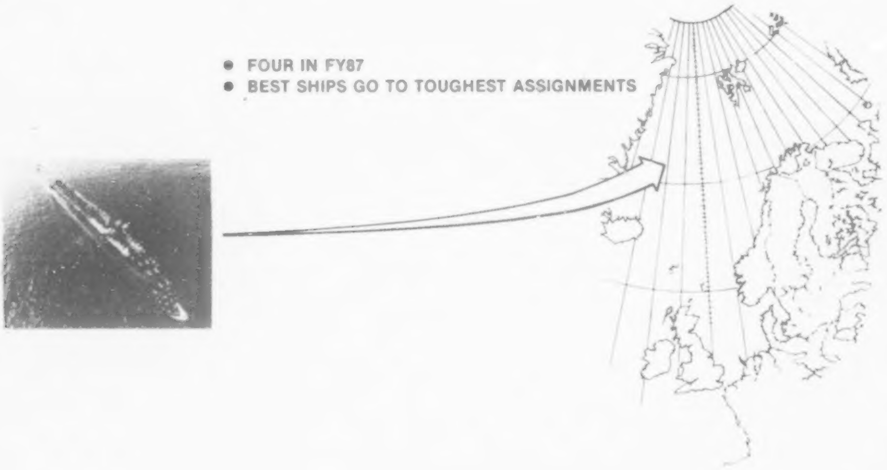
The third piece of the depth equation is sonar. [Deleted.] So, like speed, we do not have a disadvantage in usable depth in today's submarines. In fact, today's SSN-688 class submarines at sea are the finest submarines in the world. As I will show you [deleted] when we go up against the Soviets, we do have a significant overall advantage.



In order to counter the Soviet submarines of the future, those that will be built up until about the midnineties, the submarines that are authorized today, and since the fiscal year 1985 authorizations, are the improved SSN-688 class submarines. We have designed into them those submarine improvements which we have developed for the last 10-plus years. Because of our inability to get a new submarine authorized, we have launched on a program to use all the capability in this submarine to make it absolutely the best submarine we can. That has resulted in the improved SSN-688 class submarine.

This submarine has a vertical Tomahawk missile launch system, a new navigation system—particularly important under the ice—is fully Arctic capable, and has a much quieter propulsion plant, both internally and externally with her new propeller. Additionally, the improved SSN-688 will have better towed array sonars, will be capable of mining, and will [deleted].

EACH NEW IMPROVED SSN 688 IS VITAL



- FOUR IN FY87
- BEST SHIPS GO TO TOUGHEST ASSIGNMENTS

Each of these new improved SSN-688's is absolutely vital, and as you know, there are four in the fiscal year 1987 budget. They are absolutely vital because in the event of war, our best ships would go to the toughest assignments, and the improved SSN-688, by our rigorous analysis and looking at the war fighting issue, is about twice as good as the earlier SSN-688's. That means basically that it will account for about twice as many of the enemy's submarines as the SSN-688's that we were building before the fiscal year 1985 authorization. It is very important to recognize that they are more than just one better.

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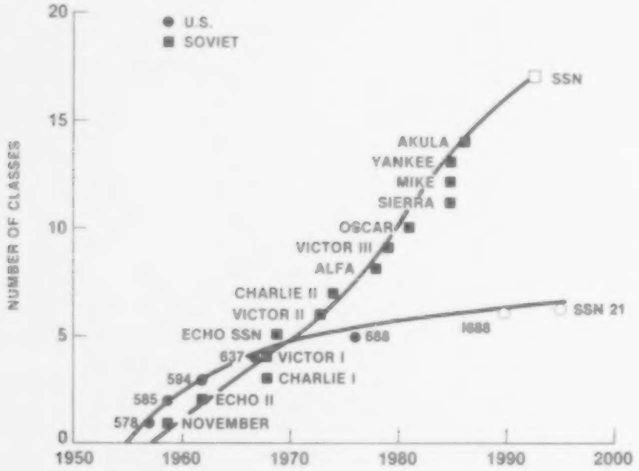
MAJOR SOVIET NAVAL EXERCISE
JULY 1985

What do I mean by toughest assignments? This is a representation of a major Soviet submarine exercise that took place [deleted].

If we were to go to war today, our war plans show that we would put [deleted] our submarines in this area. So [deleted] submarines against this force presents very formidable odds. A small number of improved SSN-688 submarines could make a large difference because they have about a 5- or 6-to-1 exchange ratio, or kill ratio, when they go up in most engagements against these types of Soviet submarines. Each one is extremely important.

NUCLEAR ATTACK SUBMARINE INTRODUCTIONS



This VuGraph addresses your question, Mr. Chairman, on the kinds of submarines the Soviets are building now. It is a plot, not of number of submarines, but of numbers of classes of submarines that have been built versus the years that they showed up in the fleet. The red are the Soviets, of course, and the blue are our classes of submarines. We can see that since 1976, when the *Los Angeles* class first joined our fleet, the Soviets have put seven new classes of attack submarines in their fleet. This VuGraph only addresses nuclear attack submarines, it doesn't count strategic submarines or diesel submarines.

As I have said, because of our inability to get new submarines authorized during this period, we have gone far too long—almost 20 years with no new design attack submarines. The improved SSN-688 will arrive in the fleet in late 1988, utilizing all available space and weight for improvements. The ships will be very, very good platforms, and we will be able to counter these new Soviet submarines. However, the Soviets obviously are not going to get out of the business of building new, better submarines.

The VuGraph depicts a projected submarine in the mid-90's. There probably will actually be several classes between now and then. It is really these mid-90's submarines that the new submarine is aimed at.

Why have the Soviet supported such an impressive submarine building program? It is a good question. My view is that they understand what submarine superiority is. They would love to have it. They want it. The only way they know how to obtain it, because they are less resource constrained than we are, is to brute force the problem. When they have several improvements they launch a new class of submarine, and they put the improvement to sea. Then when they have several other improvements, they launch another new class. They have several different shipyards working the problem together, producing these submarines which are getting better and better and better.

The SSN-688's of today have adequate submarine superiority over today's Soviet submarines. We need to continue to point toward the future if we want to retain our submarine superiority.

Let's look very briefly at some of these new Soviet submarines. [Deleted.]

[Deleted] Oscar, the largest attack submarine in the world, and the Victor III submarine. Victor III is the size of today's SSN-688 class.

Typhoon is an enormous submarine, as I said, 25,000 tons. From the keel to the top of the sail, it is as large as a 10-story building.

Mr. **Bustamante**. The SSN-688 has more firepower?

Admiral **DeMars**. The SSN-688 is an attack submarine while the Typhoon is a strategic submarine. [Deleted.]

Mr. **Spence**. I saw a news article the other day where this submarine is twice as big as Great Britain's biggest aircraft carrier.

Admiral **DeMars**. They are enormous submarines. [Deleted.]

Absolutely, yes sir. The numbers are the concern. We can overcome their numbers, [deleted] if we keep the quality edge.

Mr. **Ortiz**. What about the crew, the difference between ours and theirs?

Admiral **DeMars**. We feel that we have a definite superiority there. We work very hard, and we constantly train. [Deleted.]

If that happens in our Navy, it is a big deal. We would take the entire system down to bare metal and find out what went wrong. [Deleted.] There would be very big problems in our Navy, as you can appreciate.

Mr. **Bennett**. Following up on what Mr. Ortiz said, a matter of grave concern to me, I am sure to every member of this committee, is that when we are talking about reducing the defense budget the talk may contain some things that we didn't have in the past. Sometimes people say cavalierly or take positions that personnel in the military take personally, and we have got to remember, for instance, in the field of medical activity in the Army and so forth, and with regard to submarines, and with regard to infantry solidiers and marines and all that, the vast majority of these people are not there just to turn a buck. The vast majority are there because they are trying to help our country in a sense of dedication to our country, and when cavalier statements are made, when superficial criticisms are directed at the Defense Department or the Pentagon, it is very, very expensive with regard to keeping aboard people who really see their mission in life to help our country survive and to protect liberty throughout the world.

When people make quick, critical statements it is a very, very expensive thing to do, and I don't know what we can individually do about it, but I think everybody on this committee shares that feeling. When people talk about retirements being too bountiful, or that the military get all these benefits, well, really they are not looking at the heart of these people who are trying to do the best they can for their country.

When the country doesn't care enough about them to even look at that, we can be really destroying the defense of our country. Nobody on this committeee feels any differently than I just said.

Admiral DeMars. I appreciate those remarks. I think the Congress has been very supportive over the years, particularly of our branch of the military, and has allowed us, as I said, to expand from 1 nuclear submarine to over 130 nuclear submarines. Throughout, we have always been asked, "Will you be able to maintain the skilled personnel to run that force?" We always have, but it has been because we put together reasonable programs and have gotten fine support from the Congress.

This is another new Soviet submarine called the Oscar, an attack submarine, but a cruise missile-firing submarine, not a strategic submarine. It has 24 cruise missile tubes along here. [Deleted.] We estimate they will build to a force level [deleted].

The Soviets continue to focus on attack submarines, yet also continue to build new classes of strategic submarines. They have five or six classes, depending on whether you call something a variant or a new class. [Deleted.]

The also converted some of their older submarines—the Yankee. It used to be a strategic submarine but was cut apart, and an entire new compartment installed, [deleted].

I think this [deleted] focuses on what the Soviets are doing in their drive for submarine superiority. The Akula is compared with the Victor III here, which is about the size of our SSN-688 class submarine. This is a better shot of Akula. It is a large submarine [deleted]. Once again, today's 688 class submarine is about 7,000 tons, while the *Seawolf,* which we are asking to be authorized in 1989, is a little over [deleted].

[Deleted.]

Admiral DeMars. Yes, Sir.

Mr. Bateman. Is that not one of those things that the more you learn, the more you learn, the more you learn?

Admiral DeMars. Yes sir.

Mr. Bateman. You look for further dramatic decreases on that red scale?

Admiral DeMars. [Deleted.]

Mr. Bateman. Doesn't that capability sort of feed and sustain itself?

Admiral DeMars. Absolutely.

Mr. Bateman. Where you can predict, as you did [deleted].

Admiral DeMars. Yes.

Mr. Bateman. *X* months or years?

Admiral DeMars. It is the entire system. [Deleted.]

[Deleted.]

SUBMARINE SUPERIORITY SCOREBOARD

YEAR	QUALITY EDGE	QUANTITY EDGE	SUBMARINE SUPERIORITY
1970	✔ ✔ ✔	✓	✔ ✔ ✔
1980	✔ ✔	✓	✔ ✔
1990	✔	✓	✔
2000			

✔ U.S.
✓ SOVIET

To sum up what I have said, this is a Jimmy the Greek submarine score card we use during the football season. It totals up what I have been discussing regarding the quality edge in the submarine business, the people, the sonar, the weapons, the speed, the depth, quieting, the quantity disadvantage in numbers, and my evaluation of how that weighs together. We were outnumbered about 3 to 1, we still are. We had clear submarine superiority in the 1970s. We could operate our submarines with impunity anywhere in the world.

In the 1980's the quality edge decreased a little bit when the greater numbers of Victor III class were at sea and we noticed that things were getting tougher. We had to be more careful. We had to accelerate the deliveries of better towed arrays to retain the quality edge.

The quantity edge remained in favor of the Soviets in the 1980's. We kept the submarine superiority, but at a reduced margin.

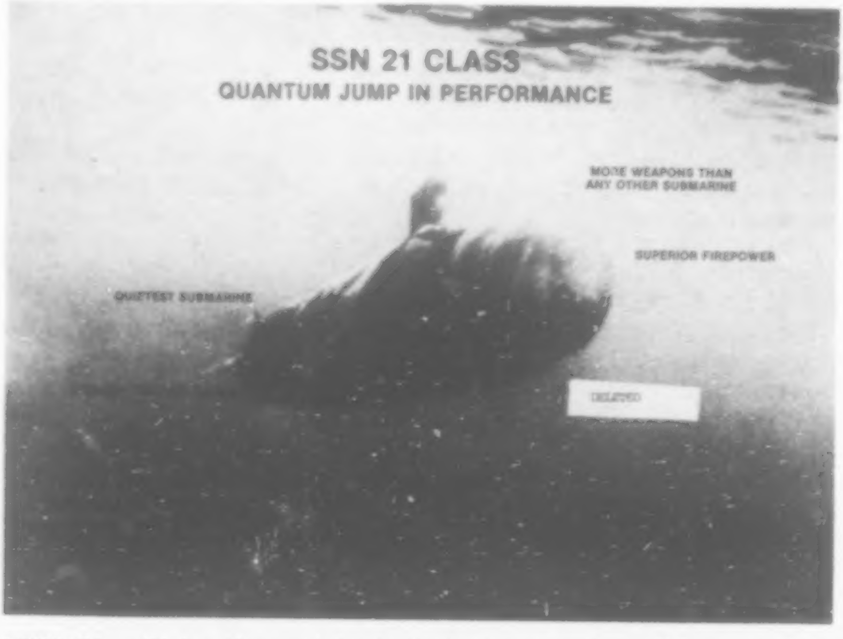
We predict that into the nineties, we will maintain [deleted] primarily due to the improved SSN-688 class we are building today.

In the 1990's the quantity edge remains the same, in favor of the Soviets, but overall superiority stays with us at a reduced rate.

The trend is obviously not good. [Deleted.] So what are we going to do about it?

SSN 21 NECESSARY FOR
SUBMARINE SUPERIORITY

SSN-21 we feel is absolutely necessary—there is a model there of it—for submarine superiority. We feel it very strongly counters the threat and that supporting research and development and design for that submarine are on track. We will show you that shortly.


SSN 21 CLASS
QUANTUM JUMP IN PERFORMANCE
MORE WEAPONS THAN ANY OTHER SUBMARINE
SUPERIOR FIREPOWER
QUIETEST SUBMARINE
DELETED

SSN-21 will be the quietest, fastest, most heavily armed submarine in the world when it goes to sea. It will have more weapons than any other submarine. It will carry [deleted] weapons, have superior firepower, [deleted] torpedo tubes, [deleted] have tactically superior sonars [deleted]. It will have the [deleted] of any submarine ever built, and be the quietest submarine.

We have subjected the SSN-21 to intense operational analysis with the results of these studies showing that it will be an outstanding submarine that will adequately counter the fleet of submarines the Soviets build into the next century.

Mr. BENNETT. To what degree is that [deleted]. Do the Russians have it?

Admiral DEMARS. [Deleted].

Mr. BENNETT. Even with the SSN-21 and what you project to the nineties, you seem to be saying that there is an ominous direction toward them with their superiority getting better in quality, and if that should turn out to be and we weren't able to change the quality dramatically, then it would seem to me that there would be some argument for producing more submarines; is that correct or not?

Admiral DEMARS. Well, yes, sir. However, we are confident that the tactical enhancements inherent in this submarine will provide the needed quality edge over the Soviet's projected threat, allowing us to execute all missions without having to increase the total numbers of our SSN's. At delivery of the SSN-21, it will have been almost 20 years since we launched our last new attack submarine class.

Mr. BENNETT. Your diagram showed you in 1990's getting worse off than you are now.

Admiral DEMARS. There are many improvements that we cannot fit in the SSN-688 class, but we know it will give us dramatic tactical capability. In other words, going from the SSN-688, which is [deleted] diameter hull, to the SSN-21 submarine, which is a [deleted] diameter hull, provides space and weight to incorporate many additional, very significant improvement.

Mr. BENNETT. Go back to the diagram you had before this. You will see that you said in the nineties you were going to be worse off than we are now.

Admiral DEMARS. Yes, sir.

Mr. BENNETT. Even with the SSN-21?

Admiral DEMARS. No, sir, without the SSN-21.

Mr. BENNETT. You are going to have it in the 1990's aren't you?

Admiral DEMARS. This simplistic Jimmy the Greek scorecard reflects our projection of marginal overall superiority with the improved SSN-688 in 1990. The first SSN-21 will deliver in November 1994 and begin making quality advances so that by the year 2000, when we have [deleted] SSN-21's at sea we will maintain a significant superiority.

Mr. SISISKY. Would you put the SSN-21 slide back up? You made a statement—I don't ask this question in an unfriendly way, but someone might say, OK, you said this is a superior submarine to anything we have got or could have now. Well, the quietest submarine obviously we can make now is the SSN-688 probably a little more quiet, I would assume [deleted].

Admiral DEMARS. Yes, sir; that is correct.

Mr. SISISKY. We can also put on the tactically superior sonars.

Admiral DEMARS. We are doing that.

Mr. SISISKY. Am I correct?

Admiral DEMARS. Yes, sir.

Mr. SISISKY. Speed?

Admiral DEMARS. The SSN-688 possess a tactical speed of about [deleted] knots.

Mr. SISISKY. The only difference really is in the weapons that it will carry, am I correct in that?

Admiral DEMARS. No, sir. Increased weapons storage in only one of the major enhancements. The ability to go to a completely new hull form, to allow space for the designers to incorporate all the significant tactical improvements that have been developed over the years is extremely important. Not all the available tactical improvements will physically fit on the improved SSN-688, we are out of room. It gives you more latitude than saying to the designers "here is the SSN-688, it is this long, and it is this wide. Now tell me how to make it quieter."

Mr. SISISKY. I am arguing with you because I am going to tell you you can do everything with a SSN-688 other than the ordinance. [Deleted.]

Admiral DEMARS. No, sir.

Put the quieting slide back on. I can't make the SSN-688 as quiet. I can only bring the SSN-688 to about [deleted], while the SSN-21 will achieve about [deleted] additional quieting.

Mr. SISISKY. Then somebody is going to argue, well, is that little bit worth——

Admiral DEMARS. Absolutely, [deleted].

Mr. SISISKY. Tell me how much more ordnance that carries, more firepower. To me that is the real benefit there other than the other things, but ——

Admiral DEMARS. Yes, sir; the increased firepower is one of the very important improvements, [deleted] the torpedo storage capacity and [deleted] the number of torpedo tubes. You go [deleted] on the SSN-21 in horizontal stowage capacity.

Mr. SISISKY. Am I correct in saying that the only thing that really determines how long a submarine in warfare stays at sea is the food and the ordnance?

Admiral DEMARS. Yes, sir. If you have a superior submarine you are going to expend torpedoes probably faster than the other consumables. We face greater vulnerability in a submarine in transiting to and from station. It is very important, to design a greater weapon carrying capacity to allow longer time on station. This in turn reduces the more vulnerable transit cycle. It is a very important consideration.

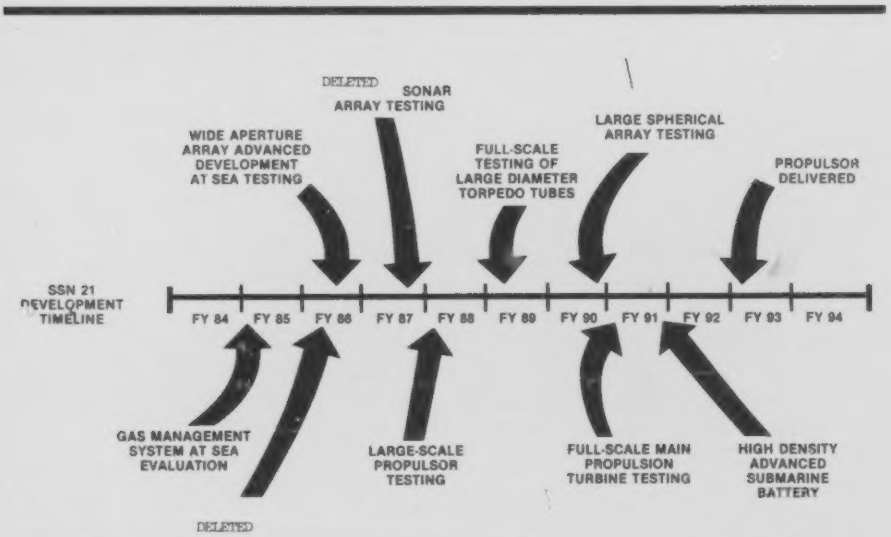
Mr. BATEMAN. Don't you also get a higher tactical operating speed with this?

Admiral DEMARS. Yes, sir. Though quieting the SSN-21 has a higher tactical search speed, which allows for more mobility and more ocean area coverage. We will improve [deleted] as I showed you in the SSN-688 [deleted].

Mr. SISISKY. The tactical speed is—explain that.

Admiral DEMARS. The ability to travel fast and still listen on your sonars. Right now we have [deleted] the tactical speed of the Soviets. We are going to open the gap more. What it gets down to is we need greater volume for both quieting and weapons. We have optimized this space and used up the reserve margin in the improved SSN-688. We have made it a much better submarine in the process, no doubt about that. It will be an excellent ship to counter these submarines that the Soviets are building now.

SUPPORTING R&D ON TRACK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SONAR ARRAY TESTING
WIDE APERTURE ARRAY ADVANCED DEVELOPMENT AT SEA TESTING
FULL-SCALE TESTING OF LARGE DIAMETER TORPEDO TUBES
LARGE SPHERICAL ARRAY TESTING
PROPULSOR DELIVERED
SSN 21 DEVELOPMENT TIMELINE
FY 84
FY 85
FY 86
FY 87
FY 88
FY 89
FY 90
FY 91
FY 92
FY 93
FY 94
GAS MANAGEMENT SYSTEM AT SEA EVALUATION
LARGE-SCALE PROPULSOR TESTING
FULL-SCALE MAIN PROPULSION TURBINE TESTING
HIGH DENSITY ADVANCED SUBMARINE BATTERY
DELETED

What we will discuss now is the [deleted] chart, the SSN-21. Research and development for this new submarine is firmly on track. VuGraph shows schematically when some of the major research and development have, and will, support SSN-21. Many of the improvements that feed in here are research and development projects that started some 10 years ago and that we have been bringing along in advanced submarine technology. However, we won't be able to utilize these improvements until we get a new hull form that we can incorporate them into.

Many of the very important technological improvements will put to sea on the SSN-688 class for testing of an advanced development model. Maybe not the final size, maybe not the exact configuration, but we will take it to sea for operational testing. This testing ensures we have good confidence when we get to the end of this development process, that we will have tried all the important improvements at sea before the SSN-21 goes to sea.

Let me show you some of those pieces. [Deleted.] This is a very important consideration. It will revolutionize submarine warfare.

Mr. Bennett. What do you call it?

Admiral DeMars. Wide aperture array. We should have given it a better name, I think.

Mr. Bateman. You are talking about a factor [deleted].

Admiral DeMars. Yes, sir. This is a very important improvement. As the Soviet submarines get quieter, it is important to react more quickly in targeting. [Deleted.]

Mr. **Bateman**. When you put that wide aperture array panel on, you are distorting your hull configuration. What does that do to your quieting? Can you still get signals to and from it?

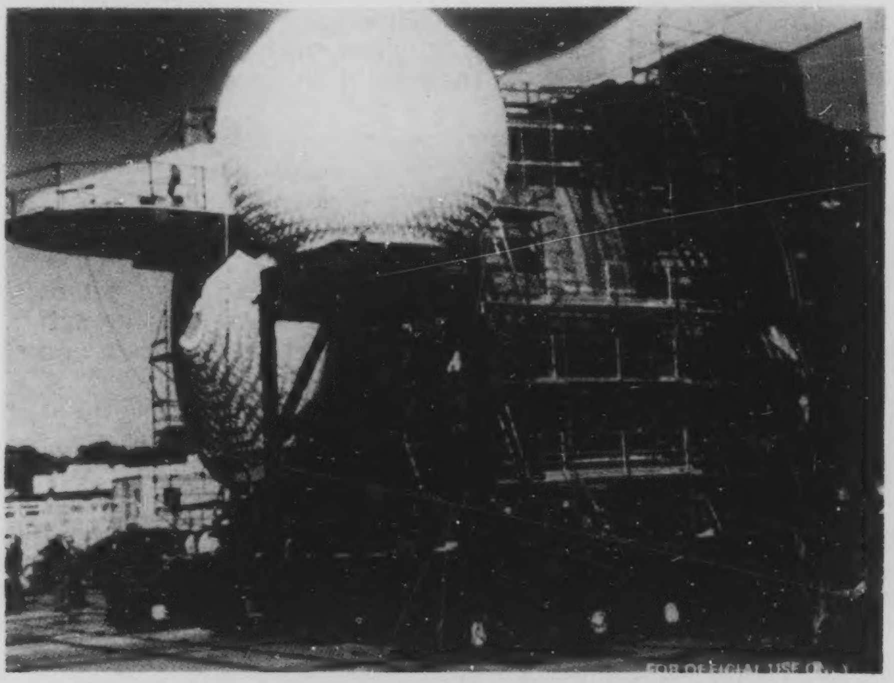
Admiral **DeMars**. That is a good question. As I said, [deleted].

Mr. **Bennett**. Since they are bulging out, why don't you make them bulging in?

Admiral **DeMars**. Because then they would intrude into the ballast tank area decreasing our reserve bouyancy and reducing our safety margin to flooding casualties. Our engineering evaluation [deleted]. Both shipbuilders, Electric Boat and Newport News, have a covered drydock they installed this tile in to maintain a very controlled clean room.

You can see each piece. As I said, we have experience with this tile at sea, and it is very, very effective. [Deleted] will be used on the SSN-21.

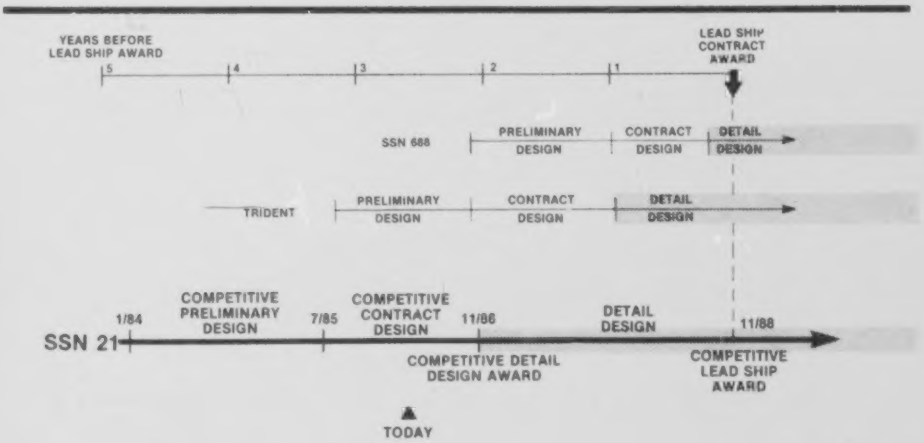
SPHERICAL ARRAY TECHNOLOGY



This shows a spherical array sonar about to be loaded on the bow of a Trident submarine. We are going to use spherical array technology for the sonar in the bow of the SSN-21. We have good experience with spherical array technology, and are confident we know how to make it work.

Finally, the propulsor, which is the most important element—in the quieting of SSN-21. It is in a wind tunnel here, undergoing flow testing, and it will look somewhat like that on the new submarine.

SSN 21 DESIGN SCHEDULE ON TRACK



The design schedule is on track. This shows the SSN-21 design schedule. We had a competitive preliminary design, both Newport News and Electric Boat, competing under the auspices of the Naval Sea Systems Command, that then resulted in a competitive contract design.4

That design will then result in the competitive award for detailed design later this year. Whichever shipbuilder wins will then start detailed design with provisions to keep the losing team on board and up to speed so that he will be in a competitive position to compete for the lead ship award.

Please note that we have 2 years of detailed design before the lead ship award is made. In the design of the SSN-21, the detailed drawings will be about 85 percent completed at that time and the ship will be very well defined. The shipbuilders will be able to put forward very realistic bids. The Navy will be better able to evaluate their bids. This innovative acquisition process has set up a very fine competitive atmosphere and compares most favorably with the Trident with only 1 year of detailed design before the lead ship was awarded, and the SSN-668 with only 3 months of detailed design. The SSN-21 process, very competitive and structured with extra time built in for both conservatism and to get the best possible design.

Mr. BATEMAN. Admiral, it would appear that the designer of the SSN-688 must have done a magnificent job in a very short timeframe.

~~Admiral~~ DEMARS. He continued to design after the lead ship contract was awarded. In the design of submarines you learn both good and bad lessons from the past. Good lessons in the Trident, some bad lessons in the way we did it before Trident.

We are attempting to put the lessons learned into the SSN-21 process.

SUBMARINE SUPERIORITY

YEAR	QUALITY EDGE	QUANTITY EDGE	SUBMARINE SUPERIORITY
1970	✔ ✔ ✔	✓	✔ ✔ ✔
1980	✔ ✔	✓	✔ ✔
1990	✔	✓	✔
2000	✔ ✔ ✔	✓	✔ ✔ ✔

✔ U.S.
✓ SOVIET

SSN 21 REGAINS THE EDGE

Finally, then, if we look to the future with SSN-21, the quality edge because of the improvements we are designing into this submarine will give us a significant tactical edge over the Soviets because of the higher technical speed, increased quieting, the greater number of weapons, and improved sensor suits. We now have a significant quality edge with a resulting submarine superiority advantage that gets us back to the advantage enjoyed in the 1970's.

Now, as I mentioned before, this Jimmy the Greek analysis, though it is backed up by significant operations analysis and studies, really is the product of our subjective evaluations [deleted]. It is that accumulated experience here that tells us that we are on the right track, and that we know what we are going.

Mr. Bennett. That is good visual aid. I hope the staff will get a copy of that so we can have a copy in the well when we debate this bill.

Admiral DeMars. It is unclassified.

Finally, I would like to show you a 5-minute video tape here that explains what submarine superiority is today.

Mr. Sisisky. Are we contemplating any plastic?

Admiral DeMars. Sir?

Mr. Sisisky. Are we contemplating any use of plastic?

Admiral DeMars. We are looking at how we can reduce weight by using plastics or composites in nonstructural areas inside the submarine.

Mr. Sisisky. I read something about the use of plastics, and one of the uses was in submarines in the hull, in U.S. News & World Report or one of those magazines.

Admiral DeMars. No, sir. It is a very expensive process. Now, one of our ASW standoff weapons, Sea Lance, has a spun plastic casting. It is very, very expensive though.

That completes the presentation.

Mr. **Bennett**. Before somebody says something, I don't think we have ever had a better picture of the submarine force and its needs than you have given. You did it very well. You must have been a professor once to be able to explain things so clearly.

PREPARED STATEMENT OF VICE ADM. BRUCE DEMARS

Mr. Chairman and distinguished members of the Committee, I am honored to report to you on the status of the Submarine Force and in support of our budgetary requirements for the years ahead. I echo Admiral Watkins' statement to the Congress when I inform you that our Navy and its Submarine Force are at a higher state of readiness than ever before. Many factors contribute to this improved readiness, but central to it is the support you have provided to build new submarines, modernize older submarines, develop new weapons and, most important of all, to attract and retain the superb young men and women who man and support our submarines in their worldwide operations.

At the same time, I must reconfirm that we face an increasingly formidable fleet of new Soviet submarines and ASW forces. This comes as no surprise as we have all been aware for at least the past decade of the concentrated and unstinting efforts by the Soviet Navy to modernize their submarines and equip them with the most advanced sensors and weapons. The evidence we see today clearly indicates these anticipated, though unprecedented, efforts have as their goal the shift of undersea superiority in their favor.

THE CHALLENGE

Admiral Watkins' posture statement to the Congress provides an eloquent statement of our maritime strategy and its application to both the Soviet and Third World threats. We consider our Submarine Force as a major deterrent to these various threats of nuclear, conventional and unconventional warfare.

During the past three decades, we have all seen the steady and impressive growth of Soviet naval power. Many of us have personally witnessed the transformation of the Soviet Navy from a coastal force of many small ships and submarines into a blue-water navy with impressive capabilities. This remarkable transformation has been the product of the unrestrained application of Soviet science, technology, resources and industry ... certainly the result of sustained efforts of unprecedented magnitude.

Over the years, we have been outnumbered by the Soviets in submarines by a ratio of nearly three to one. We have been able to maintain a reasonable margin of security against these odds only through the technical superiority of our submarines and the professionalism of our crews. During the last decade, the Soviet Navy has sought to erode our technological lead through the application of R&D on a grand scale. We have seen the introduction of 13 new classes of Soviet nuclear submarines in the past 10 years. Their new ships are by no means small and inexpensive ... they are large submarines with complex and modern combat systems, fashioned from a broad and deep technological base, and equipped with a variety of new missiles and torpedoes.

Let us compare the number of new classes or types of submarines and new submarine weapons introduced during 1976 through 1985 ...

United States		Soviet Union	
SSBN	- 1	SSBN	- 4
SSN	- 1	SSN	- 4
TOTAL	- 2	SSGN	- 1
		SS	- 1
		Special Purpose	- 6
		TOTAL	- 16
Ballistic Missiles	- 1	Ballistic Missiles	- 4
Cruise Missiles	- 2	Cruise Missiles	- 2
Torpedoes	- 0	Torpedoes	- 5
TOTAL	- 3	TOTAL	- 11

This unconstrained approach to ship and weapon development has afforded Soviet designers and engineers the ability to investigate and test at sea a broad range of innovative concepts and designs before proceeding to serial production.

Having developed impressive new hardware, the Soviets are hard at work learning how to use it on a global basis. Contrary to the past, Soviet submarines now operate unsupported in all oceans of the world. Their SSBNs routinely patrol throughout the Atlantic and Pacific. Soviet SSNs and SSGNs can be encountered throughout the broad ocean areas as well as in their contiguous seas. The operational transformation from the coastal submarine force of the 1960s into today's capable force with global reach is essentially complete.

The obvious result of this impressive program of expansion and development is that more than ever before we face a very real challenge to our undersea superiority; we are now increasingly up against quality as well as quantity. It is evident the Soviets recognize and appreciate the threat posed to their national strategy by United States and Allied SSNs and SSBNs. This appreciation is evidenced by the extraordinary effort the Russians have put forth in their attempt to achieve undersea superiority. We estimate a significant percent of all Soviet Navy procurement funds are for submarine programs; the submarine is clearly the capital ship of the Soviet Navy.

We are deeply concerned with any erosion of our advantage. To stem that erosion, we must unreservedly apply the very best of American science, technology and ingenuity. To do less will be to forfeit the undersea advantage so essential to our security as an island nation.

THE SUBMARINE ROLE IN MARITIME STRATEGY

In considering the importance of submarines to our national security, we must recognize and appreciate their truly unique range of capabilities ...

- Submarines are ready to operate on short notice anywhere in the world's oceans in support of national interests
- They are prepared to carry out a wide variety of missions, overtly or covertly, with great promise of success
- Submarines respond quickly and operate unsupported in distant areas for extended periods
- Simply put, nuclear submarines offer our national command authorities stealth ... mobility ... endurance .. and firepower

In maintaining undersea superiority, our submarines fill essential roles in all three elements of our maritime strategy, that is, deterrence, forward defense and alliance solidarity.

DETERRENCE

The U.S. Navy strategic submarine force is the prime contributor to this country's deterrence of nuclear war. Any reasoning enemy of the United States knows that regardless of his capability to strike us, our strategic submarines (SSBNs) will retain the capability to strike back and inflict grievous damage. Our TRIDENT and POSEIDON missile submarines patrol undetected throughout the oceans of the world. The stealth and mobility of these ships provides both flexibility and survivability. We believe that any potential enemy understands our SSBNs will survive any attack and remain ready to launch an accurate and devastating response. The certainty of this response is the essence of strategic deterrence.

Though not so commonly recognized, our nuclear attack submarines (SSNs) also provide a powerful deterrent to Soviet adventurism or aggression. This potent and capable force serves to convince the Soviets they could not win a war at sea, and their Navy, although increasingly impressive, would be placed at great risk in any conflict. Through their inherent stealth, unlimited mobility, and impressive firepower our SSNs create doubt and uncertainty in the mind of any opponent and thus provide a significant deterrent. When our SSNs are at sea, the Soviets, or other potential adversaries, must assume U.S. SSNs are nearby and ready for action.

FORWARD DEFENSE

Our Navy's SSNs constitute the leading elements of our forward defense, in itself an integral factor of deterrence. They can be deployed rapidly in numbers to arrive covertly at distant patrol areas ready to conduct surveillance, search, attack or strike missions. With their unique ability to operate unsupported in hostile waters for extended periods, their unlimited mobility and their multimission capability, SSNs can be redeployed as the circumstances dictate. If deterrence prevails and the crisis is resolved, the SSNs can withdraw with equal speed and stealth. If deterrence fails, our SSNs will be ready to conduct offensive action against the entire range of naval targets thereby threatening any enemy's navy and placing it on the defensive.

I can assure you that, if called upon, our submarines are ready to deploy quickly to any ocean in support of our national interests. As a matter of routine, we conduct short notice loadouts and sorties from all SSN homeports. The unqualified success of these demanding and realistic exercises gives us welcome confirmation of the effectiveness of our maintenance and training programs and great confidence in our ability to respond rapidly when necessary. We are a ready force.

ALLIANCE SOLIDARITY

Not widely known are the wide variety and scope of the operations and exercises our submarines conduct with Allied navies in all oceans of the world. These operations range from coordinated ASW operations with NATO Allies in the North Atlantic, to multi-national Fleet exercises in the Pacific, to yearly UNITAS operations with our South American neighbors. Our allies bring 17 nuclear attack submarines and over 100 front-line diesel-electric submarines to our side of the balance. They are an important consideration. Submarine operations with Allies in peacetime are essential to develop the interoperability necessary to project a credible Allied deterrence and to create an effective framework for Allied operations in war.

SUBMARINE OPERATIONS

During 1985, as in past years, U.S. submarines conducted extended and varied operations in all oceans of the world seeking to maintain the operational edge. Today, for example, we have nearly 50 submarines at sea in the Atlantic, Pacific and Indian Oceans, Mediterranean Sea and in Arctic waters. These ships are conducting POSEIDON and TRIDENT strategic deterrent patrols, exercising with the deployed Sixth and Seventh Fleets, participating in weapons and tactical development exercises, and carrying out a wide range of important missions including training and readiness operations.

STRATEGIC SUBMARINE OPERATIONS

Today's ballistic missile submarine force consists of thirty POSEIDON and seven TRIDENT SSBN submarines. Twelve of the POSEIDON submarines are fitted with the C-4 TRIDENT I missile system. The remaining eighteen are armed with the C-3 POSEIDON system. The TRIDENT SSBNs all carry the TRIDENT I missile system. Five of the TRIDENT and twenty of the POSEIDON SSBNs are fully operational and are making routine strategic deterrent patrols. The balance are in overhaul or are conducting shakedown operations following construction or overhaul.

Last year, this SSBN force completed 94 deterrent patrols including 16 by the superb new TRIDENT SSBNs. The TRIDENT submarines are the most effective warships of their kind in the world. They are quieter, faster and carry more firepower than the older SSBNs they are replacing. The TRIDENT I (C-4) missile system they carry has established an exceptional record of success with an unbroken series of 42 successful operational test flights. Without question, the Navy's strategic submarine force remains an essential element in our national security.

ATTACK SUBMARINE OPERATIONS

We have today a ready and capable force of 97 nuclear attack submarines consisting of 33 SSN-688 class, 39 SSN-637 class, 13 SSN-594 class, and 12 pre-594 class submarines. We retain four diesel-electric submarines for training. The SSNs spend fifty percent of their operating cycle away from their homeports with about one-third of the time on extended deployments. The OPTEMPO reduction program that Admiral Watkins recently outlined to the Congress originated in the Submarine Force. We led the way several years ago by mandating 50 percent personnel tempo (PERSTEMPO) for attack submarines. That is, each attack submarine is required to spend 50 percent of its employment cycle in homeport. We found that this policy forced appropriate scheduling discipline and produced the best peacetime mix of operations at sea and maintenance in port. This keeps the crews ready to fight, ships ready to sail, and families reasonably happy.

The variety of exercises and operations conducted by our attack submarines are carried out with the greatest possible realism to best utilize each day at sea and to test our ships and crews in situations they would encounter during crisis or war. During these operations in 1985, each submarine crew launched MK-48 exercise torpedoes in realistic sensor-to-target tests of the combat system and the crew. To gain further assurance that our weapons will really work if fired in anger, we launch a number of MK-48 warshot torpedoes each year to a full test including explosion; the results have been very good. We are confident that our weapons work.

Somewhat apart from the mainstream of submarining, we have been making exciting operational and technological advances and are leading the way in exploring "Inner Space". With small submersibles such as the ALVIN, SEA CLIFF, and TURTLE; the Deep Submergence Rescue Vehicles (DSRV) MYSTIC and AVALON, and the nuclear-powered research submarine NR-1, our deep sea pilots are developing the equipment and procedures for locating and retrieving valuable objects lost in the ocean's depths. Some of our systems can operate as deep as 20,000 feet, providing access to 98 percent of the ocean floor. Our pioneering work with remotely operated vehicles is expanding man's ability to explore the ocean's floor and recently paid off with the location of the

TITANIC. RMS TITANIC, which sank on 15 April 1912, was found by our search vehicle ARGO in 13,000 feet of water on 1 September 1985.

In summary, our SSBNs and SSNs effectively fulfill their deterrent roles every day of the year. Last year, more than 75 percent of the commanding officers and crews of operational SSNs participated in challenging real world deployments, preparing them for any mission in time of crisis or war. During the past three years, more than half of our fully ice-capable attack submarine crews gained experience and confidence operating deep in Arctic waters. The operational readiness and capabilities of our Submarine Force have never been better.

SUSTAINING THE SUBMARINE FORCE

Our FY-87 budget submission is designed to sustain our ability to conduct deterrent and offensive operations in support of national defense, and it provides the ships and systems necessary to assure we retain undersea superiority in the future. Key elements of this request are funding of four ships of the Improved SSN-688 class, one TRIDENT SSBN, continued development of the TRIDENT II (D-5) missile system, and long lead items for the SSN-21 SEAWOLF class. I will discuss our request within the context of the four pillars of readiness, sustainability, modernization and force structure.

READINESS

Submarine Personnel

Without doubt, the key ingredient to operational readiness and undersea superiority is the dedicated professionalism of our submariners. The skill and experience of our submarine qualified officers and enlisted men represent an invaluable resource that, once lost, cannot be replaced at any price until years hence. The submarine personnel picture is greatly improved from the nadir of the seventies, and we are grateful for the understanding support provided by the Congress which has been very effective in stimulating this recovery. Having made great progress toward correcting our personnel shortfalls, we must sustain the gains we have achieved. Our personnel programs are designed to attract and keep the good people we need and to prevent a return to crisis personnel management.

The submarine enlisted personnel situation has continued to improve. Both accessions and retention are good and well supported by special compensation programs. Enlisted supervisory manning at sea remains near 100 percent. We continue to monitor the enlisted personnel situation closely to detect any negative effect of the improved economy and the shrinking pool of eligible 17-21 year old men.

Officer retention improved sharply from 33 percent in FY-81 to 46 percent in FY-83 and has now leveled off at a record 48 percent. Officer accessions are now adequate to meet outyear requirements if satisfactory retention is maintained.

As a result of inadequate accessions and the poor retention in the 1970's, we continue to experience a shortage of nuclear-qualified submarine officers in the more senior grades. To reduce these shortfalls, Congress incorporated Nuclear Officer Incentive Pay and Submarine Pay enhancements into FY-86 legislation. We are grateful these important incentives are now in place and know they will materially assist in reducing the shortages in the future. However, the situation still requires us to fill Lieutenant Commander nuclear engineer billets with top performing Lieutenants. We recognize the great responsibility we place on these fine young officers by spot promoting them to Lieutenant Commander. As the authority to do so expires 30 September 1986, we request permanent spot promotion authority. As a minimum, we require extension of the present temporary authority.

The Submarine Selected Reserve Program is relatively small in numbers, but it is well manned and operationally ready. Our officer and enlisted reservists are assigned to mobilization billets on submarine operational staffs and maintenance activities. The reservists are thoroughly integrated with their active duty counterparts and routinely drill at their mobilization billets. During a recent Atlantic SSN dispersal exercise, Submarine Force Atlantic Staff Support Unit reservists were realistically activated on short notice to augment the Submarine Operations Control Center and were fully integrated into the Force Battle Staff. We view the submarine reservists as an integral component of our team, and we rely upon their contribution in time of crisis or war.

Submarine Material Readiness

Turning to the material aspects of readiness, I will mention several submarine maintenance initiatives which are providing us with more operational days, at reduced costs and without a reduction in quality control and submarine safety standards.

In 1973, we initiated the attack Submarine Extended Operating Cycle (SEOC) which extended the interval between shipyard overhauls from 43 to 70 months for SSN-594 and later classes. The interval between shipyard overhauls was further increased to 84 months in 1981 for all SSN-637 and SSN-688 class ships. The full implementation of this program has resulted in a typical savings of 17 percent in life cycle shipyard maintenance, while providing a 19 percent gain in operating days available for deployment.

To further reduce life cycle maintenance costs while maintaining high material readiness and retaining the opportunity to backfit warfighting improvements, we are presently studying a plan to eliminate the first non-refueling overhaul for the second flight of SSN-688 class submarines (SSN 700-718). This plan would replace the presently planned 16 month non-refueling overhaul with a 6-month shipyard Depot Modernization Period (DMP). The maintenance and improvements originally planned for the overhaul will be accomplished during the DMP or will be programmed for Selected Restricted Availabilities during the normal maintenance cycle. A detailed engineering analysis of this program is in progress, and we expect a technical recommendation on the concept in April 1987. We hope to see this program providing us with about 9 percent increase in operational availability over the ship's life and substantial maintenance cost avoidance.

Some years ago we made similar gains in SSBN maintenance by extending the overhaul interval for POSEIDON SSBNs from six to twelve years and programming depot level maintenance into Extended-Refit Periods conducted between patrols at the submarines' normal operating base. The comprehensive maintenance plan we have developed for the TRIDENT SSBNs has provided even greater gains with these ships being programmed to spend 66 percent of their life cycle at sea compared with 55 percent for the older POSEIDON class.

To support the increased interval between shipyard overhauls of SSN-637 and SSN-688 class submarines, we established a program to monitor the performance of critical systems in those ships. Titled the SSN Performance Monitoring Program, it is patterned after the very successful Submarine Systems Monitoring and Support Program which has been used to monitor and evaluate SSBN material condition since 1971. The extension of these proven analytical techniques to SSN maintenance permits us to assure the safety and reliability of these SSNs as we extend the interval between shipyard overhauls.

SUSTAINABILITY

ADCAP Torpedo

The MK-48 torpedo is our primary submarine weapon and constitutes the bulk of our inventory. The FY-85 buy of MK-48s will complete the inventory. It will remain the mainstay of our torpedo inventory through the rest of this decade. However, as discussed earlier, the Soviet Navy's new classes of submarines are significantly quieter and more formidable than their predecessors. To counter these and future threats, we have developed a torpedo which can destroy quiet, deep diving and high speed submarines and the most modern surface warships in all environments. This is the MK-48 Advanced Capability or ADCAP torpedo which commenced Technical Evaluation in August 1985. Initial open ocean ADCAP testing was done last month in a most challenging environment. We are encouraged by the ADCAP's performance and capability, and are confident it will give our submarines a great tactical advantage. ADCAP Operational Evaluation will begin this summer.

Competition is integral to the ADCAP procurement strategy. A leader-follower strategy has been implemented with follower familiarization contracts awarded last September, and follower selection planned for next month. The FY-87 budget request supports procurement at the minimum economic production level for the leader and qualification and pilot production by the follower. All FY-88 and subsequent procurement will be fully competed between the prime contractor and the selected follower.

Cruise Missiles

HARPOON and TOMAHAWK cruise missiles provide us with long range weapons for both sea and land targets. Already at sea in our submarines are the HARPOON anti-ship missile, the longer-range TOMAHAWK anti-ship missile (TASM) and the nuclear land attack version of TOMAHAWK (TLAM/N). We expect the Initial Operating Capability (IOC) of the conventional land attack version of TOMAHAWK (TLAM/C) to be reached very soon. Our FY-87 budget request maintains continued progress toward achieving TOMAHAWK inventory objectives while supporting dual source, competitive production.

MODERNIZATION

In seeking to maintain the tactical advantage and retain our undersea superiority, we must continue to modernize both our submarines and their weapons. We must realize that the very effective SSN-637 class is nearly twenty years old, and that we expect some ships of this class to serve into the next century.

Likewise, the older SSBNs are now in their third decade of service. In addition to modernizing existing forces, it is imperative that we develop new ships and weapons to meet future challenges.

Strategic Modernization

The TRIDENT II (D-5) is the cornerstone of the strategic modernization program. Its combination of range, accuracy and payload will make it capable of conducting retaliatory strikes against the full range of Soviet targets. Because of its survivability and its ability to place at risk those hardened assets the Soviets prize most, it promotes strategic stability.

The engineering development of the TRIDENT II (D-5) missile system is going well. We are now in the ground test phase of missile development during which all missile component parts are tested in preparation for full system tests. The first flight test of the TRIDENT II will be launched from the Cape Canaveral launch pad next year with the first submarine launches scheduled for 1989. Beginning with the ninth TRIDENT SSBN, all new construction SSBNs will be fitted with the TRIDENT II missile system. The first eight TRIDENTs will be backfitted with the TRIDENT II missile system as they are overhauled in the early 1990s. The FY-87 budget requests funding for the first 21 TRIDENT II missiles to support the 1989 loadout and operational tests.

To support the first squadron of TRIDENT SSBNs fitted with the TRIDENT II (D-5) missile system, the FY-87 budget continues the military construction at the TRIDENT Submarine Base, Kings Bay, Georgia. This base will essentially be a duplicate of the TRIDENT Submarine Base, Bangor, Washington with modifications to support the TRIDENT II missile system. We have been extremely pleased with all aspects of Submarine Base Bangor and are using the same management team to build the Kings Bay facility. Kings Bay is the Navy's largest construction project, and it is progressing on schedule to support the arrival of the first TRIDENT II SSBN at Kings Bay in 1989.

The modernization of SSBN communications systems continues as we seek to further improve connectivity between the National Command Authority and SSBNs at sea. Extremely Low Frequency (ELF) equipment is being installed on selected ships in support of achieving system IOC later this year. This important system will permit SSBNs to receive messages while operating at deeper depths and higher speeds, thereby enhancing the operational flexibility and effective command and control of the SSBN force. Other SSBN communications improvements include new cryptographic systems to upgrade communications security and reliability improvements in the Very Low Frequency (VLF) communications system.

SSBN Security Assessment

Some aspects of force modernization are driven by a critical evaluation of the threat to our submarines. The SSBN Security Program performs such evaluations. Strategic submarines are unique among our strategic assets in that they are inherently survivable -- they disappear in the vast area of the world's oceans. We know of no projected or postulated threat to this survivability we cannot overcome.

Discussions in this area often focus on detection mechanisms and overlook the many factors which must be considered to arrive at valid conclusions regarding SSBN force vulnerability. The very large areas in which U.S. SSBNs operate provide a challenging diversity of environments to any ASW system. The ability of Soviet ASW systems to operate effectively in such areas requires the ability to deal with such real-life situations as false detections, U.S. detection-avoidance actions, bad weather, coordination to achieve simultaneous attacks, and attack-kill probability. We believe the dispersion of U.S. SSBNs throughout some twenty million square miles of ocean make current and projected ASW techniques ineffective when examined in the total system and operational context.

The SSBN Security Program evaluates all developments affecting SSBN survivability. The goals of the program are to ensure both the long and short term security of the SSBN force by conducting research to understand the ASW implications of new and emerging technology, assessing the potential impact of Soviet research and development and developing countermeasures to potentially successful technologies. We have not become complacent; too much is at risk. Our SSBNs, both new and old, remain survivable because we continue to reassess the threat and modernize our force to meet it.

Tactical Weapons Modernization

We are modernizing our arsenal of ASW weapons with SEA LANCE, a submarine-launched standoff weapon which will deliver either a nuclear depth bomb or a lightweight torpedo with a conventional warhead. Extensive gaming and modeling has convinced us the SEA LANCE's standoff capability used in concert with the ADCAP torpedo will provide significant tactical advantage. Full scale engineering development of the nuclear SEA LANCE variant begins this summer. The FY-87 budget fully funds this development in support of the scheduled initial operating capability.

The low cost ASUW torpedo is a new weapons development to provide a simple and relatively inexpensive torpedo to employ against Soviet surface shipping. The development of this new weapon highlights a streamlined acquisition process, competitive development from off-the-shelf hardware, and multi-year procurement from the selected contractor. The FY-87 budget requests funding for the initial procurement of this torpedo in support of fleet introduction in 1989 when it will supplement our planned inventory of MK-48 and ADCAP torpedoes.

Attack Submarine Modernization

In considering submarine improvements, we must recognize that submarines usually operate alone, deep in enemy waters, and must be capable of engaging the full spectrum of enemy forces. The inability to aggregate submarine forces for mutual support and the inability to predict the tactical threat platform until engaged, place a high premium on individual ship capability and great importance on modernization programs which keep the tactical edge.

The SSN-637 class modernization program is necessary to improve the warfighting capabilities of the 39 ships of the class to enable them to successfully combat the projected threats through the year 2000. The FY-87 budget requests funding for a comprehensive group of modifications planned for accomplishment during regular overhauls of these ships. These modifications include major upgrades to the sonar, navigation and fire control systems, application of the latest techniques in sound quieting, and essential safety and maintainability improvements. These improvements will provide these fine ships with the capability to employ TOMAHAWK and ADCAP and to maintain their tactical advantage through the remainder of their service life.

Central to our force modernization is the development of the Improved SSN-688 class. Four of these ships were authorized in FY-86, and we are confident they will be the most capable nuclear attack submarines we have yet built. These ships will be fast, quiet, fully Arctic capable and provide greater firepower than earlier ships of the class. As a result of ship-wide modernization and improvement, we estimate that the Improved 688s will be twice as capable as the early ships of the class.

As you are aware, we encountered technical and schedule problems in the development of the SUBACS integrated combat system. Accordingly, we completely restructured the SUBACS program last year and implemented a new Navy management organization. SUBACS has been split into two separate and distinct programs. The AN/BSY-1 will be installed in SSN-688 class submarines starting with the FY-83 authorizations. The Fiscal Year 1989 Combat System is planned for installation into the FY-89 authorized SSN-21.

During the program restructure, Congress directed a cost ceiling modification to the existing SUBACS BASIC full scale engineering development contract and specified that competition be developed for the Fiscal Year 1989 Combat System. This has been done. Redesign of the AN/BSY-1 system architecture has reduced technical risks to an acceptable level, and we are confident it will be delivered on schedule, within the cost ceiling.

A design definition contract has been issued to a competitive team for the Fiscal Year 1989 Combat System. This competition should insure design of the best possible integrated combat system at the least cost. Compared with the time required to develop previous submarine combat systems, more than sufficient time exists for the design and testing of the Fiscal Year 1989 Combat System and its timely delivery to the SSN-21. The FY-87 budget requests funding for the award of contracts for competitive full-scale development of the combat system for SSN-21.

SSN-21 Development

The most important project in our modernization program is the development of the SSN-21 or SEAWOLF class nuclear attack submarine. As discussed earlier, the Soviets have focused great determination and vast manpower and resources on developing a very large and increasingly capable submarine force. They clearly seek the tactical advantage and, ultimately undersea superiority, with new classes like the AKULA. As an island nation increasingly dependent upon raw materials and manufactured goods from overseas, we cannot afford to relinquish the undersea superiority the Soviets strive so hard to gain. To counter this very real threat, we must maintain the momentum of the SSN-21 class attack submarine program which incorporates quantum improvements in quieting, propulsion, firepower, sensor performance, and overall mission capability.

SSN-21 is on schedule. Contract Design is underway now at both Newport News and Electric Boat on a competitive basis.

Almost 1000 designers are working daily toward a late summer completion which will form the basis for selection of a yard to start the Detailed Design later this year. Two years have been allotted for Detailed Design prior to lead ship construction award in order to provide a firm design and the most valid shipyard construction bids achievable. This compares favorably with an interval from Detailed Design start to lead ship bids of one year for TRIDENT and three months for the 688 Class. All design objectives have been met from both cost and mission capability standpoints. Independent cost analyses have confirmed the accuracy of cost estimates to date. Producibility benefits realized from the TRIDENT program are being incorporated into the SSN-21 design, giving us high confidence that even greater producibility and cost control payoffs are attainable.

If we are to maintain undersea superiority, we must continue to move ahead and build upon the solid foundation laid for SSN-21. In the FY-87 budget, we are requesting design and long lead funds as well as funding for continued R&D. We are confident the SSN-21 design is superior to any prior submarine program. I urge you to continue your solid support for the SSN-21 which will guarantee our undersea superiority well into the next century.

In recent years, submarine research and development efforts have been primarily focused on developing technology for SSN-21. To this end, we have brought together the best efforts of the laboratories, shipbuilders and systems commands to achieve success in SSN-21. Tremendously important strides in quieting, propulsion technology, weight reduction and sensor performance have been made and incorporated in SSN-21. These technological advances must be shared with other submarine programs, and the overall R&D efforts will continue after SSN-21 design is completed. Our R&D programs are structured to maintain the steady effort necessary to maintain the technological edge in submarine warfare.

FORCE STRUCTURE

Strategic Submarines

The TRIDENT submarine program continues to be an unqualified success with the last four ships being delivered an average of nine weeks ahead of schedule and at or below budget. The TRIDENT SSBNs are quieter, faster and carry more firepower than the 1960's vintage POSEIDON submarines they replace. With 34 deterrent patrols completed to date by TRIDENT SSBNs, their operational and material performance has been uniformly superb.

Of the thirteen TRIDENTs thus far authorized, five are making routine patrols from their Bangor, Washington, Submarine Base and two others have been commissioned and are conducting post-construction shakedown operations. USS ALABAMA (SSBN-731) was delivered to the Navy in April 1985, ten weeks early, and will soon complete shakedown and join her sister ships in their deterrent role. Last December, USS ALASKA (SSBN-732) was delivered 13 weeks early, $60 million under budget, and is today at Cape Canaveral, Florida, completing preparation for her first TRIDENT (C-4) missile test launch.

Five TRIDENT submarines are currently under construction, and the construction of the FY-86 ship has been authorized. One of these ships, NEVADA (SSBN-733), is in the final stages of construction and will be ready for initial sea trials this Spring. The FY-87 budget requests authorization for the 14th TRIDENT submarine and advance procurement for the 15th and 16th ships. We continue to support the President's strategic modernization plan of buying one TRIDENT each year and solicit your continued support for this most important and highly successful program.

Nuclear Attack Submarines

I am pleased to report to you the Navy's nuclear attack submarine construction program is as healthy and successful as the TRIDENT program just discussed. We now have in place the necessary programs to reach the force level goal of 100 SSNs.

This force level of 100 SSNs is based upon continued and careful analysis of our ability to counter the Soviet maritime threat and is tempered by the very real constraints of affordability. It must be emphasized the force level of 100 SSNs is considered to be a minimum level of top quality nuclear attack submarines. In the context of a balanced 600 ship Navy, the force level of 100 SSNs is both achievable and sustainable. We need only maintain the existing momentum to reach this important goal.

The SSN-688 construction program is right on track with submarines being delivered ahead of schedule and on budget. Competition is improving ship construction unit cost, delivery schedules and performance baseline. We project a total force of 68 SSN-688s through the final FY-92 authorization. To date, 52 SSN-688s have been authorized and 33 delivered to the Navy. In 1985, we accepted delivery of USS HONOLULU (SSN-718), USS PROVIDENCE (SSN-719) and USS PITTSBURGH (SSN-720). As part of the 688 Improvement Program, PROVIDENCE and PITTSBURGH were the first submarines built with the Vertical Launch System which greatly improves the ships' striking power with twelve vertical launch tubes for the TOMAHAWK missile.

The Improved SSN-688 Class now being built will be the most capable attack submarine in the world. With increased firepower and major improvements in quieting and combat systems, we expect it to be twice as capable as early ships of the class. Each Improved SSN-688 will add substantial combat capability to our submarine force, and each one is required to shoulder the burden of the most difficult wartime assignments through the remainder of this century until SSN-21 ships become available in reasonable numbers. We see the Improved SSN-688s replacing the SSN-637 class which will be rapidly retired from service in the years 1997 through 2005 and providing the logical transition from SSN-688 to SSN-21 in the 1990s.

We consider a stable SSN-688 class building program as essential to the near-term maintenance of undersea superiority.

To compensate for the construction shortfalls of the 1976-1983 period and to sustain the minimum force level of 100 SSNs, we must build more than three SSNs each year. Last year the Congress authorized the construction of four Improved SSN-688 class submarines; this year we have again requested authorization to build four Improved SSN-688s. With the SSN-688 construction program producing quality ships on schedule and within budget, we see the authorization of four Improved SSN-688s in the FY-87 budget as a wise investment in national security and solicit your support.

SUMMARY

I have been pleased to report to you that the operational readiness of our submarines and the professional performance of our submariners have never been higher. Our ships are properly maintained, the crews are well trained, and both officer and enlisted personnel accessions and retention are encouraging. At the same time, the relentless efforts by the Soviets seeking undersea superiority are reason for genuine concern and appropriate action. Our FY-87 budget request represents a balanced program to sustain operational readiness and care for our people, to modernize our ships and weapons to keep the tactical advantage, and to build to the minimum prudent force level of capable submarines. Central to our program are the continued development of the TRIDENT II (D-5) missile system, the construction of one TRIDENT SSBN and four Improved SSN-688 attack submarines, and the funding of R&D, design and long lead items for SSN-21. With your continued support, I am confident our Submarine Force will continue to provide our nation with a powerful deterrent to nuclear or conventional war and the capability to prevail should deterrence fail. Thank you.

[Deleted.]

Mr. **Bateman**. The hull strength issue, titanium hulls?

Admiral **DeMars**. Yes, sir.

Mr. **Bateman**. Comment on the significance or lack of significance of hull strength.

Admiral **DeMars**. [Deleted.]

Mr. **Bateman**. Thank you.

Mr. **Ortiz**. Thank you for your presentation. The question that I want to ask is that we know that we are outnumbered. What have the NATO allies done as far as a new submarine, new classes? Are they doing anything?

Admiral **DeMars**. Yes, sir. They make an important contribution, I feel. The allies bring to the table about 16 attack, nuclear attack submarines, primarily British, although we are beginning to open up cooperation more with the French now. They have three nuclear submarines.

More importantly, the allies have [deleted] diesel submarines, and they are very fine modern diesel submarines that we use in concert with our war plans for specific missions. They cover certain parts of the ocean that are close to their homeports and free up our submarines to do the more demanding missions in the forward areas. So we cooperate primarily with the British and primarily in what is called water space management. Somebody has to make sure that two friendly submarines aren't in the same points of ocean at the same time. We work very closely in command post exercises. We share to a degree what waters we will stay out of in time of war.

Mr. **Ortiz**. You say it is compatible with the Russian-built submarines?

Admiral **DeMars**. They are not as sophisticated as ours. They do not have the superiority advantage, the tactical advantage that we have.

They would not do the more demanding missions [deleted].

Mr. **Ortiz**. Another question I want to ask: There have been a lot of editorials and newspaper articles about the long time that the crews go out to sea, and I have heard that is going to change.

What is that going to do to our strategy? Is it going to change any?

Admiral **DeMars**. No, sir. We have no plans now to change the period of time at sea for any one mission.

What you have read about is something called operational tempo. The decision has been made that it is best to keep our warships in their home ports about 50 percent of the time. That allows us to do the proper operational maintenance and keep the families reasonably content.

The submarine force a number of years ago, about 5 years ago, came to the determination on their own and established 50 percent as the operational tempo goal for submarines. That program has been adopted by the rest of the Navy within the past year.

Mr. **Ortiz**. That is not going——

Admiral **DeMars**. Nothing new for submarines.

Mr. **Ortiz**. What about retention? You think this is going to hurt your retention rate?

Admiral DeMars. No; I don't think it will affect it because we have been doing it for about 5 years. We are used to long patrols. Normally, of course, strategic submarines are under way for 70 days at a time, attack submarines leave home for periods [deleted]. We have done that for 30-plus years and been able to maintain reasonable retention in our highly skilled force.

Mr. Ortiz. Thank you.

Mr. Sisisky. No questions.

Mr. Bennett. I would like to ask a question. Could you provide us a report on the status of the Subacs?

Admiral DeMars. Yes, sir.

Mr. Bennett. Either at this point or in the file?

Admiral DeMars. Yes, sir, I would like to give you an unclassified——

Mr. Bennett. There are several questions I would like to ask.

Since you are going to do it orally, will there be a delivery delay for any SSN-688-class submarines as a result of these problems, and what has been lost as a result of the Subacs development problems?

How can we go forward with the SSN-21 in view of the problems of the Subacs systems? To the extent that this could be made public, of course; there may be something secret.

Eventually, I would like to get—since it is hurtful to us with regard to Congress and public, to the degree that it can be public, I would like to have it public.

Admiral DeMars. Yes, sir; I will try to summarize it now and I will also provide you with a written paper.

Mr. Bennett. That would be good. If you gave me a paper, that would be great.

Admiral DeMars. I think it is no secret that we had serious cost, technical, and schedule problems in the Subacs business stretching back for the past year. I am happy to say now that those problems are behind us.

We have, after two detailed Navy studies of the problem, completely restructured the program.

Mr. Bennett. What was the problem?

Admiral DeMars. The problems were threefold, I think. One is we were going after a technology that was unattainable in the timeframe we wanted it. We didn't get into the details sufficiently to recognize that we allowed the contractor to continue to attempt to bring that technology in.

So we made a misjudgment of the industry's and the Navy's ability to bring in the particular technology we wanted.

As it turned out, that particular technology was not absolutely necessary to do the job at hand and in the length of time that we were developing this weapon system. New technology approaches were developed and had become somewhat the industry standard.

Mr. Bennett. What was the technology we didn't get?

Admiral DeMars. [Deleted.]

[Deleted] though a much more reliable, much more state-of-the-art, method.

We have shifted to this method. That is probably the essence of the fact that we have not lost significant capability in doing so.

Mr. Bennett. Could you find a substitute?

Admiral DeMars. Yes, sir.

Mr. Bennett. Your objective was not met but——

Admiral DeMars. It turned out——

Mr. Bennett. Doing it differents ways——

Admiral DeMars. Yes, sir, to a degree unnecessary.

The second problem second mistake I think we made is that we given the uncertainty in this development process, tied it to the delivery of a new ship. The SSN-751 has to have a combat system on the pier in May 1987. So we found we were unable to bring in this revolutionary technology against the hard schedule requirement.

The third problem that we had is that in launching off on this new combat system, which brings together both the sonar, the acoustic end of the business and the combat system or fire control targeting end, it was really a significant change in the way we did business in the submarine fire control/sonar area.

We did not recognize that, and we did not set up a proper management organization in the Naval Sea Systems Command to manage that. You now see a proper management organization sitting on boths sides of me today.

We took two of the finest young flag officers we had, and we rearranged the duties between them to get on with this problem.

Mr. Bennett. Are you indicating to me that somewhere down the pike between now and the year 2000 there is going to be a SSN-21?

Admiral DeMars. No, sir. What we did was change the program. We have taken it from a single program and broken it into two separate and distinct programs.

Admiral Reynolds is in charge of this area. He now has two program managers under him, one for the BSY-1 program, which will serve the SSN-688. That program we feel is on track, and will deliver the combat system in May 1987 to the SSN-751. In other words, deliver it on time. We will not have any shipyard delays because of the combat system.

The second part of the combat system reorganization that has a completely different program manager, although it is still under Admiral Reynolds, is the fiscal year 1989 combat system that is designated for SSN-21. We are just in system design definition right now, which is the first stage of developing that combat system. We have a total of 8 years to develop it for SSN-21, which is more than we have used for any combat system of equal complexity.

We think we have all combat system problems in hand.

Mr. Bennett. The second one would be on the first SSN-21?

Admiral DeMars. Yes, sir; it will be on the first SSN-21.

Mr. Bennett. You are saying we really haven't lost any time?

Admiral DeMars. No, sir.

Mr. Bennett. On the SSN-21? You lost it on the SSN-688 class?

Admiral DeMars. We lost some minor capability in 688's, primarily in operability, the ability to make the system play better and make it more user-friendly.

Mr. Bennett. As far as the SSN-21 is concerned, you haven't had a delay?

Admiral DeMars. No, sir; there are no reasons to delay. The combat system is a very small part of the development of the SSN-

21. Most of the external arrays for that sub are at sea now in various parts, and we are gaining valuable experience at sea. As I said, the rest of the system has a total of 8 years to develop low risk technology and will deliver to support SSN-21.

Mr. BENNETT. The public doesn't have that impression, does it?

Admiral DEMARS. No; that may be because I don't get to write those newsletters that fly around town.

The third thing I might say is Congress helped in the process. We got direction in the 1986 authorization bill that said that we had to cap the contract for our full-scale engineering development contract with IBM.

We have concluded those negotiations, and after a very long intensive period, we have capped that contract at the dollars that are in the 5-year defense plan. That was very useful, that pressure from the Congress in getting fiscal control of this program with the contractor.

Mr. BENNETT. I have only one more question before we go to Mr. Hunter.

If we were to have to cut back for the budget, for any reason, and that includes some sub programs, in your judgment, would it be better to keep the money for the SSN-21 but cut back to three SSN-688's or would four SSN-688 submarines with no money for the SSN-21 be better?

Admiral DEMARS. I was hoping you wouldn't ask that.

Mr. BENNETT. We probably would have to answer it.

Admiral DEMARS. That is a most difficult question. I guess my problem is it is sort of like asking which of your children do you want to kill? The improved SSN-688 is necessary for the near-term threat and SSN-21 is necessary for the farther term threat. Both are vital and equally important in my opinion from the submarine superiority point of view. It is difficult for me to make a choice between the two.

Mr. BENNETT. We will have to make the choice, if that is your answer. My gut feeling is that you ought to go ahead with the SSN-21. That is looking for the future and SSN-688 is somewhat the present, and we have to always be looking for the future unless something else comes in.

I don't want to prejudice what we might ultimately do. It would look like if you are sufficiently content with the SSN-21, you could have said to me, well, there is some fragility to some of the things in the SSN-21; we gain a little bit by postponing it.

Admiral DEMARS. No, sir. The SSN-21 is already overdue.

Mr. BENNETT. Since you didn't say it, you are pressing it to say we really want to go forward; you ought to go forward with the things that you developed that is better even though you lose some of the short-term values.

Admiral DEMARS. I think that that would be my feeling if I were absolutely pressed to give an answer.

Mr. BENNETT. You are pretty close to it.

Admiral DEMARS. Yes, sir. The fact that we have not designed a new submarine for 20 years I think speaks for itself. We are far behind.

Mr. BENNETT. That is what I think.

Admiral DEMARS. I think it is long overdue and we have to get on with it.

Mr. ORTIZ. Now, if we were to do that, how long will it take to complete, to build the SSN-21?

Admiral DEMARS. It will go to sea in December of 1994, starting construction in December 1988.

Mr. ORTIZ. Finished in 1994?

Admiral DEMARS. We are about 4 years into a 12-year process that is a very involved, complicated process involving the design and development of a major warship. We have done our homework. We are on track. We see nothing that should preclude authorizing the ship in 1989 and delivering it in 1994.

Mr. BENNETT. Those are a long number of years in the future.

Admiral DEMARS. Absolutely. We need to get on with it.

The Soviets would be overjoyed if they got the news that we weren't pressing on this sub for whatever reason.

Mr. BENNETT. Mr. Hunter.

Mr. HUNTER. Thank you, Mr. Chairman.

Could you put that slide back up again that shows the standoff detection ranges?

Admiral DEMARS. Yes, sir; that of course is what we expect to get with the SSN-21, [deleted] acoustic advantage.

Mr. HUNTER. I understand that. Let me ask you something, Admiral. To be candid, isn't it true that the distance has been shrinking rather rapidly in the last few years?

Admiral DEMARS. Yes, sir, absolutely. [Deleted.]

Mr. HUNTER. [deleted.]

I turn to your page 4: "We are deeply concerned with any erosion of our advantage. There has been a major erosion."

Is that a fair statement?

Admiral DEMARS. Absolutely, sir.

Mr. HUNTER. One thing I think is a trademark of American military planning over the last 10 years is that we have underestimated the speed by which the Soviet Union makes technological developments in areas where it really concentrates, and it is obviously concentrating greatly here.

One thing that I think we should consider as a committee is not, Mr. Chairman, maybe putting submarines against submarines in this budget, if we have to make some cuts, SSN-21 versus the *Los Angeles* class. Maybe we should beat submarine against some of our surface vessels. We have to do that. I just was privileged to be a member of the panel organized by our Naval Institute in California, San Diego, with a number of our admirals, Metcalf and Davis and others, about discussing the future of our surface warfare, and I will tell you when you talk about the Soviets going to a nuclear exchange or nuclear offensive in order to get rid of our finely tuned Swiss watch, which is our battle groups, and there is an uneasy silence, because nobody has a real answer even if they don't have over-the-horizon targeting and some of the other things, we all could conclude they can get enough platforms close enough that in a saturation attack, with, say, SSN-19's or something like that, nuclear type, which they are, we all know, on battle groups, it is going to be, we are going to have our submarine fleet left versus their submarine fleet. [deleted.]

So, my question to you I guess is, If you were having to make decisions, since we are making hard decisions, going to have to make them, between more ships on the surface and building the 600-ship Navy, or less ships under the surface, what would you go for?

Mr. **Bennett**. That is like asking a father whether he likes his child.

Admiral **DeMars**. We will always need a balanced Navy. The submarine force is the ace in the hole for the war, I think. The surface Navy and the battle groups have provided very valuable service for the last 30-plus years in what they do. It is important that we keep that balance.

Mr. **Hunter**. I understand the need for balance. I am talking about priorities here.

Admiral **DeMars**. I think we need a balanced Navy.

Mr. **Hunter**. Let me ask you one other question. The Soviets have about 300 attack submarines, you have got 100. Before that 3-to-1 ratio had enormous technological advantages associated with it, which is disappearing today.

Admiral **DeMars**. Yes, sir.

Mr. **Hunter**. As we go down the line, do you think you can handle the 300?

Admiral **DeMars**. Yes. sir, I think with improved SSN-688 and the SSN-21 our programs will regain the technology edge to a degree that we can continue to handle the numbers mismatched, which is not going to go away.

The rough 3-to-1 disadvantage will always be the case, I believe. Out intelligence predictions are that it won't get any worse than that.

Mr. **Hunter**. It doesn't have to be the case. We have got the wherewithal in this country, if we decided to build more submarines and build less ships on top, we could do it.

One thing that bothers me is that some of our surface experts—if you read the testimony in the surface seminar that was held here in Norfolk—some of our surface experts almost admit that their survivability is at such a point we need to have ships underneath, which really shocks me.

I mean they have statements to the effect that we got to have more submarines if we are going to attrite down to the point where we don't have enough to do a lot.

Mr. **Bennett**. Well, some very wonderful people in the Navy and outside of the Navy have made observations that after the first 2 or 3 minutes, the only ships we would have left are the ones under the waters.

Mr. **Hunter**. I don't think minutes, but maybe weeks or months.

Mr. **Bennett**. As long as you are going to say it, you might as well say minute when you are dealing with nuclear war.

It seems to me that the threshold is just the same with regard to the sea as it is the land if they are going to knock out our carrier groups with nuclear weapons. I think you are in a nuclear war, and that is the only way in which the statement is valid to say that after a few minutes or a few weeks, we are going to be all under the water.

As I see it, you are talking a nuclear war against our combatant ships. If you are talking about a nuclear war against our combat ships, I cannot see how that could be a nuclear war against everything else, like ICBMs. So you are really fretting yourselves about something which is a possibility that we would just allow our surface ships to be sunk and get only to submarines without retaliating with nuclear weapons since they already used nuclear weapons.

I think it is fairly academic if we are going to have nuclear war, it seems to me when our ships on the surface were knocked out; I am saying that because some very great military people have made the same observation you have implied, and I just think it is specious. In other words, I think nuclear war is nuclear war. If they are going to attack our carrier groups with nuclear weapons, that is a nuclear war, and we will to a nuclear war, right? That is a horrible thing to contemplate but——

Mr. HUNTER. You are doing a couple things there. There are people who believe that if there is any place where the Soviets think they might be able to limit nuclear conflict, it is probably at sea, because they won't be attacking population centers, won't be attacking military targets.

The point that I am making, I guess, is that our ships even if you don't think we are going to have—they are going to be able to take out our surface fleet, which our surface people are very uneasy about. They have got 300 attack submarines; we have got 100, up to now, up to the last 10 years we have had such a technological advantage that has been enough.

What I am saying is, we are sitting here admitting the Soviets have closed that ring we are talking about, and they have got some top, smart people working on closing it right now, much faster probably than we can imagine, and yet we are going with the same 3-to-1 ratio and largely I think that is probably driven by our budget and by politics in the Navy. But the fact that you have got a lot of people that don't stride the deck of submarines. We have got a certain split.

I think this committee needs to look carefully at that split and say, do we need, because of Soviet technological advantage, to change that ratio from 3 to 1? Maybe, Mr. Chairman, maybe we do.

Mr. BENNETT. I am willing to look at it. I thought I had to say what I have said to you because personally I don't see a likelihood of a war which would not require us to move a lot of things on top of the sea. We are not going to have great big carriers of material and things like that that are going to go under the sea. Nobody has invented one yet, and it would be highly impractical to think that was something we could move toward.

Certainly, it is decades and decades off if we ever even contemplated it. So you are right down to the fact, would we retaliate with nuclear weaponry if they attacked our fleet? I think obviously we would. I think even the most sensitive people in international affairs, I think I am one of them, would say well, you are already in a nuclear war, if they attack your carrier fleet, you are already in it. Nobody can win such a war. It is devastating, it is over, once they go over that threshold of attacking combatant ships with nuclear weapons, I think we have had it. I think we are in a nuclear war, I don't think anything is going to stop it. I think it is going to be an Armageddon, and I don't believe there is any realism to any other thought, but it is worth thinking about. The thing that worried me about it, and the reason I jumped into it is because some very fine wonderful people that I admire very greatly have made statements that within minutes or a very short period of time, all we are going to have left are submarines.

I just think somebody ought to look at that and see if that is valid. That is like saying that nuclear war against our surface ships would not lead immediately to a nuclear war against land targets. I think it would.

Mr. HUNTER. I enjoyed the exchange. Let me ask you another question.

You have said that the diesel submarines that our European allies have are a valuable complement or supplement to our system, to our defense, and yet, I know we have been through the bill on this thing, whenever people bring up the idea of building anything but nuclear submarines, even though they are going to have a pretty good price tag on it, the Navy is thumbs down on that and always has been.

I understand the advantage of having nuclear subs. Is there a possibility, as we go into a constrained budget, that we might, if we decided we wanted to make an increase in the amount of submarines, you are not going to be able to build 8, 10 *Los Angeles*-class submarines or SSN-21's, at close to $1 billion apiece, you might be able to get some additional submarines, diesel submarines, if in fact you could build them at close to $200 million apiece.

My question to you is this: If you have a diesel submarine, can you have that same standoff detection capability vis-a-vis the Soviet Union with a diesel submarine?

Admiral DEMARS. No, sir, especially not at equivalent speeds.

Mr. HUNTER. Why not?

Admiral DEMARS. The ability to get that sort of a tactical advantage resides to large degree in size, size of the sonars you can put on the submarine, size for weapons carrying ability, and size for sound quieting and mobility.

But probably more importantly, the diesel submarine, although it is a very fine weapon system, does not have the mobility to get the long distances to where we have to fight the war.

If we are going to fight the war off the east or west coasts, then you could use diesel submarines there in limited missions. That is why the Soviets have a lot of them. They are going to be fighting the war in their backyard. The long transit distance it takes to get from our ports up to where the war is going to be fought makes the diesel submarine not fit into our strategy.

Mr. HUNTER. So what is the range difference on the diesel versus——

Admiral DEMARS. Well, if a diesel submarine starts off with the nuclear submarine, the nuclear submarine can be up where I am going to fight the war [deleted] traveling at a very high quiet, undetectable speed, while the diesel submarine must snorkel periodically all the way there [deleted]. The snorkel requirement which requires the diesel to raise up a pipe above the water, pull in air, charge his batteries, then go down and run, slows down the diesel's transit considerably.

Mr. HUNTER. It takes how long?

Admiral DEMARS. [Deleted] for the nuclear submarine I can then stay on station [deleted]. These numbers are just rough. Whereas, the diesel has [deleted] on station. While I am on station, I don't put anything above the water or make noise with the diesel engine.

He regularly, if he is going to have any mobility at all, has to put his snorkel pipe above water and make noise, by running his diesel engines, and in the forward areas, you are going to have Soviet naval air, antisubmarine warfare planes. It will be a dicey place for a diesel submarine to be. I don't think they will survive very long.

Mr. HUNTER. You don't think the diesels will survive?

Admiral DEMARS. No, sir, not against the expected large combined ASW forces.

Mr. HUNTER. You think probably our European allies are going to be able to kiss theirs goodbye?

Admiral DEMARS. They are using them in different places, choke points close to their home ports where we might expect Soviet submarines to come through. They are therefore using them in areas where we have air superiority, air cover.

So that makes a big difference. You almost need air cover to operate diesel subs.

Mr. HUNTER. What is the cost? Have you looked at the cost difference between the diesel——

Admiral DEMARS. It jumps all over the place. Generally it is largely understated in the press that we read. [Deleted.]

Mr. HUNTER. They were up to how much?

Admiral DEMARS. [Deleted.]

If you want a high-priced, highly capable diesel submarine, something that goes out and stays on station a long time, a long way, I don't know, my guess would probably be maybe you would have to pay at least $250 million, something like that. They are not cheap.

Mr. BENNETT. Mr. Hunter is exploring this intelligently to see what is best for our country. When we get to the floor, it could be that we would be met with people that really hadn't done the study Mr. Hunter has done, and are not really quite as inquisitive but more interested in seeing if they can cut down on what we need.

Therefore, I would appreciate it if you would, in looking over this testimony, that you might want to add some additional thrust which will be intellectually helpful to us.

I am not trying to put words in your mouth. You seem to have said it is very well for the Europeans to have diesel submarines and they do have importance to us, but for us to feel we can get cheap diesel submarines as a substitute for this very small number of submarines we are producing, of a better type, would not be an economic thrust or proper defense thrust.

If you could develop that, it would be helpful because I am sure that anybody who wants to attack this program is going to use that diesel submarine as a good example because they have done it in the past.

Admiral DEMARS. Yes, sir.

Mr. HUNTER. One thing I was thinking about, I don't mean to take too much time, was perhaps having at some point some diesel submarines as a supplement to what we have. In other words, if we want some extra boats, about four, I think, is all we are going to get of attack boats, we may have trouble getting that. If you could keep four and go with two or three diesel submarines, and they could have, for example, a mission on the east and west coasts, where we do have air cover. There still is a good antisubmarine platform and their submarines are coming in quite close now. Would the Navy be adverse to that, getting them as a freebie or an extra that you hadn't contemplated?

Admiral DeMars. Nuclear attack submarines are not necessarily a cheap way to do ASW. They are the most cost-effective way, however, and in some places the only way to successfully conduct ASW, especially in the forward areas where the SSN is the only platform that can survive. But off the east and west coast of the United States, I think it is much more cost effective to do ASW with other platforms such as surface ships and ASW aircraft and use existing arrays.

Mr. Hunter. If you got that, if you had that proposed as an add-on, not as an amendment that would be a replacement of anything, would you accept that or look at that as the nose of the camel under the tent, and therefore, we have to fight even if they give us a million diesel submarines?

Admiral DeMars. We will have trouble supporting it based on the reasons——

Mr. Bennett. There is another camel that has his nose under the tent and this committee is going to be faced with this soon and you will find me voting with the camel, and that is the mariner fund.

Here is 1 billion dollars' worth of money which was appropriated to build combatant ships, and although on paper the Navy is opposed to this, to turn it into mariner-type use, they say we are not going to get the billion dollars to build combatant ships; therefore, we are going to say we better have the commercial ships with combat aspects.

So that, as I understand, with the mariner legislation, I do want to throw that to you to tell that—my guess is the Navy would prefer diesel submarines like you referred to than the mariner-type ships, and they would be opposed on record to any of this but since they are not going to get the billion dollars for any kind of ship, they are settling for putting it into a mariner ship, unofficially, even though we don't know any of the mariner ships will ever be utilized.

The big problem is, is anybody going to be able to use them with the cost of wages and things like that? Aren't they going to be on the dock? You can see I am ambivalent about this. I am leaning toward the creation of those ships, knowing the Navy doesn't really oppose it, and yet money which was authorized and appropriated for building combatant ships is going to be put down to a priority of third-level probably, in between that would be diesel submarines. I am sure they would prefer diesel submarines to the mariner ships.

This committee is likely to come out unanimously for those mariner ships. I am only putting this out to let you think about what we are doing here.

We are saying when the money goes in there and it is not used, because it is saved, because of better contracting and stuff like that, that money is sitting there. We are now attaching it to this Mariner Program and I would guess that the Navy would prefer diesel submarines to that kind of ship.

What you are saying could transpire and maybe that would be a technique to do it, but my own feeling about it is that if the Navy really wants to have diesel submarines, they ought to come vigorously forth with a program themselves to ask something like the Mariner Program, what are the next things you would like to have.

There is no doubt in my mind at all that the mariner ships are not the next level of priority to the Navy ships. There are scores of ships they would prefer to the mariner ships with those combat funds. I would think the Navy really ought to really like what is happening here and come forth with some kind of legislation which this committee could introduce which could push it in the direction of getting very drastically needed combat ships, preferably to having all this money going toward mariner ships which are not really that uptight a situation with regard to the Navy responsibilities.

Admiral DEMARS. Yes, sir; I understand what you are saying about mariner ships, but I think——

Mr. BENNETT. You still wouldn't——

Admiral DEMARS. I could clearly say we do not have a mission for diesel submarines.

Mr. BENNETT. How about discussing that? That is worthy of putting on record.

Why don't you have a mission?

Admiral DEMARS. In our particular strategy our submarines have to go long distances in order to fight.

As I said before, it is not cheap to cause a warship to submerge. You pay a cost premium to have it do that. You ought to only use those type ships where no other platform can do the job adequately. We think that our Navy strategy, which uses the submarines early and far forward where other platforms can't survive, is the best use of our limited assets that we put into that part of the Navy.

Mr. HUNTER. Are they all going forward?

Admiral DEMARS. No, sir. Of our 100 SSN force, [deleted] would probably be required in the shipyard, [deleted] would go forward and [deleted] would be used in support of battle groups hundreds of miles away in the battle groups, but not necessarily in the forward areas.

In either major role, a diesel submarine can't fulfill those missions. One, it can't survive in the forward areas because it has to poke up its snorkel regularly. Two, it can't keep up with the battle group because it doesn't have the mobility or speed. It has to snorkel regularly.

So we really have no missions for diesel submarines, and I think the Navy would strongly oppose any diesel submarines as a waste of money.

We do have four diesel submarines right now that were built in the early 1950's, and we use those primarily for training purposes.

Mr. HUNTER. You are satisfied with 100 nuclear attack?

Admiral DEMARS. No; in the context of the money that the Navy gets for a balanced Navy, I think that is a fair share and the optimum compromise. Every part of the Navy could make an argument for more forces. I can make my arguments.

Mr. **Hunter**. Balances have never been won with fair shares; they have been won with what it takes.

Mr. **Bennett**. I don't know that you want to extend to make more explicit what you said, you said you don't want the diesel submarine at all.

Admiral **DeMars**. Absolutely.

Mr. **Bennett**. I guess that means as between that and the mariner ships, you would prefer them, but you really don't have a Navy purpose for the mariner ships, do you?

Admiral **DeMars**. I would rather you build the country another SSN.

Mr. **Bennett**. What you are saying there is that you realize that there is sacrifice, that money to go to noncombatant ships all the way down to a mariner-type ship, is certainly not something the Navy would start out to do, but if the money is not going to be used anyway for the Navy, that is a decision Congress has to make.

Admiral **DeMars**. Yes, sir.

Mr. **Ortiz**. I would like to remind my colleagues that the U.S.S. *Wisconsin* will play a very important role in the defense of our country.

My question is this: My good friend and colleague was speaking about priorities; how did we arrive at the request today, the priorities that you presented today?

The other day when Admiral Watkins was speaking to our committee, he mentioned that all the other branches of the military were involved in strategy. OK. Your presentation today, is this from the blessings of the Joint Chiefs of Staff as to what your presentation is going to be here today, your request?

Admiral **DeMars**. Absolutely. Yes, sir. We fit into Navy's current maritime strategy as forces that would go forward early in the numbers that I mentioned earlier, and with a certain number of submarines back with the battle groups. It is all part and parcel an integral part of the Navy's current strategy.

I would also add that the nuclear submarines that we have are multipurpose submarines with mission versatility, and should that strategy change or take a different tack, we would be fully capable of supporting that also, but we do fit in integrally with the Navy's plans now.

Mr. **Ortiz**. Before we do any cutting, let's look at it, OK?

Mr. **Bennett**. Any other questions?

Mr. **Bateman**. Admiral, a very tough question was asked in the context of matching SSN-688's versus SSN-21's. I think there are another mix that I hate to have to ask the questions, but let me ask you to do the bad thing and prioritize SSN-688's, SSN-21's, and another Trident, given arms control implications on the Trident versus all the other factors that come into play.

Admiral **DeMars**. Well, that makes it an even more difficult issue because we really are mixing apples and oranges in discussing strategic Trident with the tactical SSN-688 and SSN-21.

It seems to me that one reason that the Trident is such a good deal now is because we have continually been able to bring the construction price down in that program. The number of man-days that are allotted to build the Trident has decreased significantly and continues to decrease, as you know.

Therefore, if we interrupt that, we are going to perturbate that situation and won't necessarily get the best price as we build toward the force level.

It is clear now that we are benefiting from tremendous leverage from the Trident Program with about half of the country's strategic warheads consuming only about 10 percent of the Navy's budget. So I put Trident in a separate category and feel that it is a very, very important strategic part of the country's defense and the most survivable leg of the triad. Therefore, I think it is clearly of utmost importance and ought to receive significant consideration.

Mr. **Bateman**. Well, Admiral, let me only comment that you will have no problem with this member of getting both, because I think the need is critical, but because of the total composition of the Congress, if something has to slip, I think we do have to face the prospect of answering the very tough question, does our Trident, our SSN capability, is it sufficiently strong and robust that if there has to be a slip, we can let that slip awhile rather than let the SSN-688 and SSN-21 slip for awhile? That is the kind of horrible question I hope we don't have to resolve.

Admiral **DeMars**. Sir, I understand the question, and I really don't have a good answer for it. I can come closer to answering candidly, the tradeoffs between SSN-688's and SSN-21 and staying just in the tactical area.

It is very difficult in the strategic area. I think that our strategic submarines are of such overwhelming importance to the country and provide an umbrella over all else that we do, in my view, that it seems to me that the question of Trident tradeoffs needs to be discussed in the concept of a tradeoff with other strategic forms, not with tactical platforms.

I think the Navy supports the strategic triad in a very cost-effective way. Tradeoffs in the strategic area need to be made between strategic platforms and not between strategic and tactical platforms.

Mr. **Bennett**. Any other further questions? No further questions. At 1:30 this afternoon we will hear Admiral McKee.

Thank you very much. We have never had a better presentation.

[Whereupon, at 11:05 a.m., the subcommittee recessed, to reconvene at 1:30 p.m., this same day.]

AFTERNOON SESSION

STATEMENT OF HON. CHARLES E. BENNETT, A REPRESENTATIVE FROM FLORIDA, CHAIRMAN, SEAPOWER AND STRATEGIC AND CRITICAL MATERIALS SUBCOMMITTEE

Mr. **Bennett**. The subcommittee will come to order.

This afternoon, the subcommittee will receive testimony from Adm. Kinnaird McKee, Director of the Nuclear Propulsion Directorate of the Naval Sea Systems Command.

Admiral McKee always gives us a tremendous amount of information about the Navy's nuclear power program, and we look forward to his testimony today for bringing us up to date on the *Seawolf* program and other new developments.

Admiral, it is a real pleasure to have you here. You follow an exciting person, and it is wonderful to hear you testify.

STATEMENT OF ADM. KINNAIRD R. McKEE, DIRECTOR OF THE NUCLEAR PROPULSION DIRECTORATE, NAVAL SEA SYSTEMS COMMAND

Admiral McKEE. Thank you.

Mr. BENNETT. You may proceed as you wish.

Admiral McKEE. With your permission, I have submitted a written statement that I would propose not to read.

Mr. BENNETT. Without objection, it will be made a part of the record at this point. You might want to give us an overall picture.

PREPARED STATEMENT OF ADM. KINNAIRD R. McKEE

Fiscal year 1987 is a critical year for the Navy and the Naval Nuclear Propulsion Program. A confluence of several current events could profoundly affect the Navy's nuclear powered fleet, including those ships now in the inventory, those we expect to build, and the men who will sail them. One of these is our request for initial funds to procure long lead material for our first new design attack submarine in twenty years, the SSN-21—*Seawolf*. However, before discussing *Seawolf*, I would like to bring you up to date on the overall program.

We now have 177 naval reactor plants in 149 ships and eight land-based prototype plants. Nuclear-powered ships now comprise more than 40% of the Navy's combatant fleet. Last year we added four more ships to the fleet, and we have 27 additional ships authorized or under construction. Our responsibility for safe and reliable nuclear propulsion plant operation continues to expand as the fleet grows and ages. Half our operating ships are approaching their initial design lifetimes.

Our nuclear-powered ships represents a highly leveraged investment in national defense. When their contribution is weighed against their relatively small and stable resource requirements, it becomes apparent just how good a bargain these ships really are. But we must remember that this leverage works both ways. The potential impact of an apparently small pro-rata reduction on safety and operational effectiveness is way out of proportion to its real dollar value.

Nuclear-powered ships have now steamed over 65 million miles, without a reactor accident and without release of radioactivity having a significant effect on the environment. This record reflects the continuous adherence to high standards and technical integrity which have been the hallmark of the Naval Nuclear Propulsion Program since its inception.

We have had a wide margin of superiority over the Soviets in all aspects of submarine warfare. Though the Soviets outnumber us, we have been able to count on technical superiority to help even the odds. The Soviets have now substantially closed that gap, and are near technical parity in undersea warfare. Last year I told you they had introduced four new attack submarines in the last three years. We now know that the latest has substantially reduced our performance margin. For years we have had the best people and the best submarines, but if this trend continues, the principal difference may only remain in the skill of the operators.

Many will probably view these reports of Soviet improvement with suspicion—are they really that good? Others have asked how the Soviets could achieve their present levels of performance when many intelligence indicators predicted this would not happen until the next decade. Why were we "surprised"?

Well, the Soviets are that good, and we are not surprised. My principal feeling after the first intelligence briefing on the new Soviet boats was one of great disappointment, because it was clear that we were party to the event. In the mid-1970's, the Soviets saw what the 688 Class could do and immediately redoubled their efforts to catch up. The product of that effort is now at sea and operating well.

Even so, we are not yet too late. 688s will have a tough time with the best of the new Soviet submarines, but they will still be able to handle them—for a while. It is with the next Soviet generation in mind that we have laid the groundwork for *Seawolf*.

More has been done to tailor *Seawolf* to specific military requirements than any submarine since *Nautilus*. She will be quieter, faster, and more powerful than any of her predecessors. The Naval Reactors Program is developing a propulsion plant which will deliver significantly more power at about the same size and weight as our existing plants. The *Seawolf* reactor will be more efficient and quieter at all speeds than any preceding plant. She will also have significantly improved secondary machinery.

We need *Seawolf* as soon as possible. Out initial intention was to seek a Fiscal Year 1987 authorization for the first of the class, but fiscal pressures and the technical challenge inherent in the design made it clear that a Fiscal Year 1989 authorization was better. The present schedule will get her to sea in Fiscal Year 1995, and we are on schedule. Contract design will be completed this fall, and competition for detailed design will follow. The design of all major propulsion plant equipment is well along, as is the test program that supports design decisions for long lead components. Fiscal Year 1987 advance procurement funds are needed for equipment, including the reactor plant, which is critical to meeting the ship construction schedule.

We are proceeding at a very deliberate pace for the sake of economy and technical conservatism. We are spending more time in the design and development phase of *Seawolf* than for any prior submarine. To put that in perspective, consider the crew who will man the ship. *Seawolf's* first Commanding Officer is currently a junior Lieutenant. He has probably just qualified in submarines. His Executive Officer is probably an Ensign. The CPOs are Second or Third Class petty officers. The rest of the officers and crew are still in high school and college.

At the same time, we are mindful of the difficult budget situation this year. Major uncertainties have been inserted into the process. The choices will be hard, but arbitrary pro-rata cuts are not the answer. Some things are inherently more important than others. Safety and operational effectiveness deserve special attention. Like any good banker, we should invest our available funds in those things that provide the greatest return.

And no matter how tight things get, we can't afford to neglect the future. *Seawolf* is a critical investment—one which must be made now. We are late, but not yet too late to preserve our advantage. We must support what we have set in motion. Otherwise, we will concede superiority in one of the few areas where we now hold an unequivocal advantage. Even more, we may also put our entire strategic and tactical investment in nuclear-powered ships at risk.

A man who owns a fine home cannot afford to skip his insurance payments—he puts at risk not only his most important investment, but also perhaps his way of life, all for relatively small short-term savings. The same thing can happen to the nuclear Navy. Congress has always recognized this, and has supported the Program well.

Admiral McKee. I have some things to show you here. What I propose to do is give you an overview of my business and talk to you about how I view things right now.

This is a summary of the charter that I have. You are all well aware of that. I decided to use it as an index of things to talk about that are of interest to this committee.

Safety is top on the list, Mr. Bennett, as it always has been in our program. We all saw the shuttle disaster. And it is going to be a long time before we really understand what happened. I was at home in Jackson, MS, when that happened. When I saw it, it hit me like it did everybody else, but I think it hit us in a special way because there is some similarity to that program and ours. The space program is a very highly technical effort, very demanding standards, clearly a program that involves risk—and they declare it an acceptable risk, as we in our program declare what we do an acceptable risk in the interest of national——

Mr. Bennett. It makes you do them as if they were fresh things, things that are very dull and stale and repetitive.

Admiral McKee. That is right.

Mr. **Bennett**. This is a grave problem in communications. It is very difficult to keep real uptight like an infantry soldier all ready to plunge at the enemy, it is so easy to fall back and get rested.

Admiral **McKee**. In fact, our worst enemy is our own safety record, because we may tend to take our responsibilities lightly. Certainly a lot of folks on the outside tend to look at the way I do business and say "you are just inflating your own responsibility, you don't need to be that conservative, you don't need to spend that much money," so I sent my whole organization back to take a good hard look at how we do business. Are we good as we think we are? Because we are also in the acceptable risk business.

We have an excellent safety record, and there are a lot of pressures which, if we are not careful, create an opportunity for mischief, or just simply a diversion of attention. Looking back at my last year, my senior technical people and I spent an extraordinary amount of time fighting off the nibbling of the ducks when I should be paying attention to the program's technical business and safety. A tremendous amount of money is being spent on security because people are worried about our changing environment, but as a matter of fact, those are all structured to contend with hypothetical threats. The real threat is to be diverted from our responsibilities right within our own program and we neglect that at our peril.

I just wanted to tell you that because I am mindful of it. It also bears on some of the things we are doing. This morning somebody asked "In the face of this budget pressure what are your priorities? Is it the *Seawolf*?" I said that is a very easy thing for me to answer. My priority is the safe operation of the ships we already have; that has to be my first priority. Either we do that right or we stop.

These are some of the things I am going to talk about. To give you a perspective on our program, the safety record continues as it has been, and I think you ought to look at that. Our occupational radiation exposure declined from last year even though the number of people and the number of ships involved in our program increased. Look at the current list of Soviet problems in their program. Those are two new ones since the last time you saw the list.

Think for a moment what we would be doing today if I had to present the Soviet record as ours. Think about that. The sea-based strategic deterrent for this country would be tied up, and you would be having hearings. It could be years before the ships could go back to sea. The fundamental strategic posture of our country could change overnight, even with the perception of a problem, whether it was real or not.

We have a responsibility of some significance, but surprisingly, it doesn't cost a lot to carry out that responsibility, it just takes a lot of attention. There is a lot of leverage in what it does cost.

We continue to steam, continue to train a lot of operators—66,000 operators trained. This is what the nuclear Navy looks like today—177 operating reactors. The largest reactor program in the free world, and my organization has the cradle to grave responsibility for the safety and effective operation of all those operating reactors.

The nuclear Navy is a valuable investment. Let's talk like businessmen for a moment. Put aside what the nuclear Navy can do and its contribution to the strategic deterrence—I think Vice Admiral DeMars pointed out that 50 percent of the warheads at any given time are in the SSBN force. That constitutes a small percentage of the Navy budget, and a tiny percentage of the DOD budget. Best bargain in the business.

The ships are worth about $110 billion. If you arm them, put air wings on the carriers, it is bigger than that. To give you an idea what that investment means——

Mr. **Bennett**. That sentence I didn't understand. If you arm them and put wings on the carrier it is bigger than that?

Admiral **McKee**. What I meant is the investment does not include the airplanes that fly off the carriers. When we talk about the carrier without airplanes it is disarmed. What I am saying is the total Navy investment is really greater than the $110 billion.

Mr. **Bennett**. One hundred ten billion covers what?

Admiral **McKee**. That is all of the ships, and supporting equipment.

Mr. **Bennett**. I was thinking about——

Admiral **McKee**. Nuclear-powered ships.

Mr. **Bennett**. I was thinking about Trident submarines. You are talking about nuclear-powered ships.

Admiral **McKee**. Yes, submarines and ships.

Mr. **Bennett**. Well, you see, the figure that was given to us this morning, about 15 percent being what we were spending on strategic things, didn't have anything to do with nuclear power, it had to do with the delivery of nuclear weapons. That is what misled me.

Admiral **McKee**. Nuclear power is a very small percentage of even that small percent, but it is the enabler. If we don't do it right, nothing works.

Mr. **Bennett**. I understand you are broader than just Trident submarines, it was getting the figure together. I was thinking you were telling me that $100 some odd billion was the cost of just the Trident submarines.

Admiral **McKee**. No, sir.

Mr. **Bennett**. You are talking about the total nuclear Navy?

Admiral **McKee**. Yes, sir.

Mr. **Bennett**. I understand.

Admiral **McKee**. Submarines have a reputation for being expensive, but submarines which are 38 percent of our Navy in terms of combatants only use 33 percent of the operating costs.

The conventional wisdom says these nuclear-powered ships are more expensive than several other kinds of ships. They aren't. They are less expensive than other kinds of ships. If you include the aircraft carriers, that number does go up, in terms of only submarines, it is less.

All the submarines in the U.S. Department of Defense use up only 5 percent of the budget—half for strategic submarines and about half for attack submarines. Submarines are a very highly leveraged investment.

Mr. **Sisisky**. You should be selling submarines.

Mr. **Bateman**. Would you like to buy a few?

Mr. **Hunter**. Shouldn't we have more of them?

Admiral McKee. It would be nice, as long as they are capable submarines.

Mr. Bennett. You slipped on the last phrase.

Mr. Hunter. I think we have one coming. I am not particular. We had a debate this morning whether we can afford a couple of these, whether we need a couple of these diesel submarines. I would be willing to take on some more nuclear powered submarines. What we need is a Navy leader who will stand up and say I need more. You guys will fight like hell for your piece of pie, but don't you think that balances because you have a better piece of the leverage in your own program. Submarines are very valuable, becoming more valuable. Shouldn't we have more of them as compared to surface ships?

Admiral McKee. I think the balance inevitably must change. It is a question of when it does and under what circumstances.

Mr. Hunter. Is that right?

Admiral McKee. I think so. But it is going to be beyond my time and your time, probably. This is a very ponderous process. You can holler right full rudder and the ship only changes course one degree.

Mr. Hunter. Do you think maybe in the year 2010 we may have a lot more submarines than we have surface ships?

Mr. Sisisky. He only has an 8-year contract.

Admiral McKee. I got into that discussion this morning. Let me show you this. If you look at how much money we spent over the life of the program. It says, we are fairly levelly funded. Even though the responsibilities go up and there are peaks when we build something new, it is a fairly consistent budget and it is highly leveraged.

You remember the Washington Post said SSN-21, *Seawolf*, would cost a billion dollars apiece, and the Navy wanted a $100-billion investment for a 100 attack submarine fleet. That would imply we are not going to buy any other kind of submarine, but if you look at the evolution of the submarine force level, you see we have a mix—currently about half 637's and half 688's. As the 637's go out, the submarine fleet will become about half 688's and half new design submarines. At about the same interval in the future we should begin filling in with the next generation of submarines.

We built almost 40 637's and will build 50 or 60 688's and probably build a like number of the new SSN-21. SSN-21's will be built into the next century. Then we need to start considering what comes after SSN-21. In my judgment by that time, for a lot of reasons, the fundamental mission structure for submarines is going to change. The idea of submarines hunting other submarines is going to be far less interesting than it is today because they are all going to be so damned quiet.

Mr. Hunter. Including the Soviet's?

Admiral McKee. Including the Soviets.

Mr. Bennett. You told us what they are not going to do: tell us what they are going to do.

Admiral McKee. There is the new Soviet boat. It is a nice picture. It is better than a picture.

Mr. Bennett. You said there would be a change.

Admiral McKee. They will be quiet, we will be quiet, and it will get to the point where airplanes can't find submarines. Airplanes require [deleted] to find submarines. [Deleted.]

It is also getting harder for submarines to do that. We will eventually get to the point where submarines are going to have a hell of a time, finding other submarines except in the act of perpetrating some sort of violence.

Mr. Hunger. Firing a missile?

Admiral McKee. Or if he makes an approach against a convoy or battle group—he has to display vulnerabilities to do that. But the idea of going out and finding submarines in the broad ocean is going to get less and less interesting.

On the other hand, there is an inherent capability in a submarine, the perception of a submarine in an ocean area scares the hell out of people, and has for years. Look what the British did in the Falklands. And I think you are going to see the evolution of the submarine drive more and more toward the strike role and toward its original role, which is to just sweep the ocean clean of any surface ships. Also as we come up with weapons like Tomahawk and perhaps a derivative of Tomahawk farther down the line, you will see submarines more in the strike role. That is somewhere off in the next century.

One of the things that the Navy needs to be doing now is figuring out what these changes will mean so that we can figure out how to build a submarine to do that.

Mr. Hunter. On that point, accepting what you said, I think you have a great deal of credibility with us. The problem I have, that I have laid out for my colleagues this morning, is that the Soviets keep a 3-to-1 ratio on us. That is not only in at-sea boats, that is also in boats being produced. That 3-to-1 ratio we can live with when we had the big qualitative gap, and as you have said, that qualitative gap is narrowing quite rapidly.

My question is, when we go into 1990 and beyond, are we going to be able to keep this one, keep these relatively low numbers as opposed to high Soviet numbers when the quality keeps getting closer and closer, even with our best efforts?

Admiral McKee. That is a problem, but let me put it in a different way. Some Navy people love to run around, point to a 3-to-1 Soviet advantage and warn that the sky is falling. But it really isn't 3-to-1. If you match their firstline attack submarines against our firstline attack submarines, the ratio is about one to one. If you sprinkle in the Soviet diesel boats, that runs the ratio up. But diesel boats are really minefields, in my judgement. And again, to get the 3-to-1 ratio you also have to throw in the SSBN's which aren't going to go hunting for trouble, their job is to hide.

Mr. Hunter. Do they have that many more SSBN's than we do?

Admiral McKee. Yes, sir. They have more.

I am categorizing the numbers differently. But if I go down and count firstline, we will give it to you for the record, first-line submarines, ours versus theirs, the numbers are closer than you think, and with a reasonable exchange ratio we think we can handle it.

Would it be nice to have more than 100 submarines? Yes, it would. But as I said last year, what you are doing is buying insurance for this country of ours, and you have to decide how much is enough like buying insurance for your wife. I bet you don't have as much insurance for her as your agent thinks you ought to have.

With the budget pressure you are under this year, I took a somewhat different approach on how to present my views to you. I looked at it this way. I have to do two things. I have to protect the existing investment—that is a matter of the selection and training of people, I also have to do something about the cost of overhauling and repairing these ships, and I have to do research and development.

A good part of my research and development goes to making sure old ships can continue to run. Half of the nuclear Navy is approaching its design life right now, which is 20 years. We have extended it to 30 by doing some technical things. We have to do the research and development that makes it possible to go that far and at the some time, we have to provide for the future. That is what our program tries to do. As a matter of fact, the amount of money involved in protecting and enhancing that investment in terms of the value of the investment is very low. If we were a business I would get good marks for that because it is pretty good.

I will give you an example of the leverage of our program. Look at that. Nuclear people in all the Navy. Nuclear officers are less than 1 percent of the Navy. Nuclear trained enlisted men, they are the heart and soul of the nuclear program. If they can't run the reactor right it can't be used.

Mr. SISISKY. Are these people that work on the reactors?

Admiral McKEE. These are guys that run the reactor. If those guys don't do their jobs, the ship doesn't get underway and it is not just a case of something being broke. I am talking about some sort of casualty that would tie up the whole program.

We pay these guys extra money. We are doing better in retention of nuclear officers because of your help. It is a very highly leveraged investment, but the problems aren't over and we are still training a lot of guys on a proportional basis. As the number of guys we have to train goes up, the number of officers goes up, the DOE prototypes in which we train are getting old.

You are helping me with a Moored Training Ship Demonstration, [deleted]. This will use an SSBN that was laid up for SALT—the *Sam Rayburn*. Remember last year I testified that we wanted to get on with this. We had authorization of the Moored Training Ship Demonstration spread over 2 years going into this, but in the 1986 budget process the Appropriations Committee moved the money to do this job ahead a year. This saves money and gets us started earlier. Otherwise the ship will just sit there waiting.

Mr. HUNTER. That is a training ship?

Admiral McKEE. Yes sir. The problem is the Appropriations Committee is ahead of the Authorization Committee in this. We need your help to solve that.

Mr. SISISKY. They do that every now and then.

Admiral McKEE. We are in a kind of a Catch-22 situation because the money is in the 1986 budget without authorization so there is nothing in the 1987 budget. Without fiscal year 1986 authorization, the whole concept will go down the tubes. I don't think the 1987 budget is much of a candidate for add-ons.

Mr. BENNETT. Why couldn't we have a piece of legislation that allowed them to reprogram some stuff for combatant ships. We are likely to do it for the merchant marine like he is talking about. Maybe we ought to think about it on this bill.

Mr. SISISKY. They shouldn't go to appropriations first; they ought to come to us first.

Admiral MCKEE. The notion of moving it up a year was not something we proposed, it was something the Appropriations Committee came up with. They asked if we could get it started. There is a lot of concern among some of the members in the Appropriations Committee about cutting up this ship that still had a lot of life left in it which I could use, and I think you have shared some of that concern.

Mr. HUNTER. We put an amendment in asking that it be looked at for other things.

Admiral MCKEE. That is right. By that time it was already off the line and about to get cut up and several of the members came up with a notion—why don't you start now. But the money was in the 1987 budget. We couldn't start. In 1986 we only had some long lead money. They said let's get started now and shoved it forward. If we had been smarter we would have come to you first.

Let's look at our people business. We are doing well in getting young guys and retaining them. We have the highest retention we have ever had because of the help you have given us. However, we still have a big deficit in senior guys and will for some time.

Another part of this is to keep the manning requirements down. Here is an interesting statistic. If you look at the number of guys it takes to run a ship. I just use men per 100 tons of displacement—that is not very precise but at least it gives you an idea how many people you have for the size of the ship. We have been driving the number of folks down all along and we man submarines at a far lower level than any other warships in the Navy.

In terms of preserving the investment, overhauls are a big ticket item, as you all well know. The money we spend in the shipyard is not insignificant. What we have done, for both attack submarines and SSBN's, is to stretch the interval between overhauls farther and farther. That doesn't make the overhaul cheaper, but it does great things for the cost of operating the ship.

Mr. SISISKY. How about the safety?

Admiral MCKEE. Safety is maintained because we have a program of short maintenance periods in between overhauls and we are able to maintain the safety. That is a critical element of the decision to do this.

Mr. SISISKY. You do the SRA's?

Admiral MCKEE. Yes, sir; that is as far as we can stretch it. I think the number will probably settle around 8 to 10 years. The reason we could go to 12 on the SSBN's is because they do the same thing all the time under a very rigorous schedule and have their own maintenance facility, something that doesn't fit the attack submarine mode of operation.

To give you an idea of the investment, again part of the investment we are trying to preserve, that is about the percentage of nuclear submarines. I am only talking submarines because that is all we are buying in the budget. We are not buying aircraft carriers or surface ships. That is the percentage of the SCN budget that is going into submarines, one Trident a year, and the SSN force at about four per year, phasing into the SSN-21 out here.

A fairly stable picture, thanks to your help. That is important to us. But that is not a big proportion, by no means the lion's share of the SCN budget.

Now, you had a good brief on the *Akula* this morning so I am not going to spend a lot of time with it, but I thought I would [deleted]. This is the latest of the new Soviet submarines. [Deleted.]

This boat has put them in the same league with our 688. Some of the mythology is the Soviets always build small fast submarines. Take a look at that. The *Akula* is a very large, very capable submarine.

Mr. BATEMAN. Is that the *Typhoon*?

Admiral MCKEE. No. *Typhoon* is two and half times this size. I couldn't [deleted.] The SSN-688 is a 7,000 ton submarine, and the SSN-21 is a 9,000 ton submarine.

The *Akula* a good boat, in fact a pretty sexy looking machine. It is a good submarine. The point to get from [deleted] of this thing.

My first command was the U.S. X-1a midget submarine. It was smaller than the pod on the *Akula*. So the notion they build little submarines is not——

Mr. HUNTER. What advantage does this give them?

Admiral MCKEE. The size is necessary to get the horsepower for speed and to achieve primary quieting. When we went from the *Skipjack* class up to the 637 class we went from a 3,500 ton boat to a 4,800 ton boat, over a thousand tons additional volume mostly to accommodate the quieting. They have been able to accommodate the quieting in the *Akula*. The real difference that we see here, and I think Vice Admiral DeMars made it clear this morning, is that they have [deleted].

Mr. BENNETT. Why is the superstructure so big on that, so much bigger than ours?

Admiral MCKEE. One thing they have in the superstructure is [deleted]. That makes it big. They also just customarily make a lot bigger sail than we do. We keep [deleted].

Mr. BATEMAN. Does this one represent what they are in fact deploying?

Admiral MCKEE. [Deleted.]

Mr. BATEMAN. This is what, a 688?

Admiral MCKEE. Yes, sir. And this is what we expected [deleted].

Mr. BATEMAN. Is that hypothetical?

Admiral MCKEE. [Deleted.]

Mr. HUNTER. Can they put out any type of long-range ballistic missiles in the attack submarine?

Admiral MCKEE. [Deleted] equivalent cruise missile, very much like ours. They also have [deleted].

Mr. BATEMAN. Vertical launchers?

Admiral MCKEE. [Deleted.] But if you just walked into an automobile and submarine dealer showroom, you'd say I want to buy one of these submarines, you would be tempted. It is a pretty sexy looking beast.

What it reveals is they don't have——

Mr. Bateman. We know the answer?

Admiral McKee. [Deleted.]

Mr. Hunter. How many of those can they produce a year?

Admiral McKee. [Deleted.]

Mr. Forssell. [Deleted.]

Mr. Hunter. How many are in the ocean now?

Mr. Forssell. [Deleted.]

Mr. Hunter. How many in the yard?

Admiral McKee. [Deleted.]

An interesting aspect of this development is, what do you do with your time? Now, I think I told you last time that we were at about the same point in designing the SSN-688 class as we are now with the SSN-22 class when I was a lieutenant commander. I have been a flag officer for 14 years. So we have been sitting dead in the water.

The Soviets, on the other hand, saw *Los Angeles* go to sea, and knew what was coming. That is about the time we hypothesize they started on *Akula* as a counter to the 688. The SSN-21 is a counter to *Akula*. You can bet—there is another Soviet line down here because every one of their developments have been heel and toe or overlapped all the way along.

What we are going to do with *Seawolf* is to preserve one of the few weapon systems where we enjoy an advantage. If we don't do it, we are opting out of the game.

Mr. Sisisky. They call that an arms race?

Admiral McKee. Yes, sir, that is right. That is what they call it. And from my own standpoint, I have to provide the propulsion plant. These are the improvements for the SSN-21 class. That is what is going to be better about the submarine. It is going to be quieter, it is faster, dives deeper, has more firepower, more resiliency, it can take battle damage, and stay on the line and [deleted].

Those are factors concerning the whole submarine but the point is, if I am unable to do what I must do with the propulsion plant, then we will not be able to achieve any of these goals. So the task before us is not insignificant.

There are a number of developments involved. These are the ones for which I am not responsible, but these are underway, they support other than propulsion, and I think Vice Admiral DeMars probably showed you some pictures of those. One of the important things is we are now trying to build and put to sea the equivalent of equipment so we know what we are doing by the time we build the ship.

In my own area I have to develop [deleted].

Mr. Bennett. How are you going to do that?

Admiral McKee. [Deleted.]

Mr. Sisisky. What did you show us last year? You had a model or something like that.

Admiral McKee. [Deleted] into this reactor plant that we have not been able to do before because we didn't have the necessary tools at hand.

That is what it is supposed to look like—50 percent more powerful, 10 percent heavier.

Because noise is such a critical part of the equation, we are having to use special facilities, some of which we have used before and others that we have not. We are looking for noise in places we didn't worry about before because they were masked by other noises. The process is like peeling an onion.

For example, all of the components we are going to build will be tested in our [deleted].

Mr. BATEMAN. Where is that located?

Admiral McKEE. [Deleted.]

That is the task. We have to do it. We can do that, and we have got a pretty solid start—did Vice Admiral DeMars show you this chart this morning? There have been various suggestions—why don't you slow down? You are accelerating, you are going too fast to build this submarine, why aren't you moving slower?

This is a comparative profile—the time for conceptual design, contract design, and so on. As you can see, the time we have laid out to make sure we have this thing ready to build is almost double the time we have ever taken with any of the previous submarines, including Trident, which is just as complicated, perhaps more complicated.

The original idea I had back in 1982 was to go for an 1987 authorization for this ship. That was technically feasible but expensive. So we made a decision that we would not try to go for 1987 authorization, instead we would go for a 1989 authorization. That was a good decision because some of the things we have to do to bring this ship to fruition are going to demand that amount of time. It is also a better budget situation than if we tried to do it the other way.

Mr. HUNTER. Can you make that thing any cheaper? Is the billion dollar price tag pretty accurate?

Admiral McKEE. I think it is pretty accurate. That price tag is for a production model. One of the things you have to remember is that we won't really know how well we can do until we build some. The first three Tridents were up here on the learning curve. We are down here now with fairly steady production. The question is, will the learning curve of the new submarine do the same thing for us? I think we will probably see a similar profile although I can't quote the numbers.

Mr. SISISKY. It should be better if you are taking twice as long.

Admiral McKEE. It should be better too if we are building more of them. That is a learning curve with one vendor building one ship per year. If we are building three, and an occasional four per year, with two guys in head to head competition that should give us some advantage, but I sure wouldn't want to predict until we get into the——

Mr. HUNTER. What if we were building six of them a year?

Admiral McKEE. I think that would drive it down further.

Mr. HUNTER. Could you come down close to $750 million?

Admiral McKEE. I can't give you an answer to that. It is too soon. Seven hundred and fifty million dollars is about what we are going to be paying for 688's after many years of production. So I don't think we are going to make it as cheap as the 688 because it is a much more capable ship.

Let me give you an idea of things that are really moving and that this is not a paper program. You saw a bunch of things from

Vice Admiral DeMars this morning which showed various [deleted]. Here is some of my work. [Deleted.]

Mr. BENNETT. SSN-21 components?

Admiral MCKEE. These are the R&D components for SSN-21 but [deleted].

Mr. BENNETT. You made reference a while back to the $100 billion the Washington Post said we paid for these SSN-21's. To be fair about it you would have to make a real analysis of the figures, you would have to know what the 688 would be?

Admiral MCKEE. That is right.

Mr. BENNETT. So sometime if you could get that figure for me I would appreciate it.

Admiral MCKEE. We can give that to you, yes sir.

Mr. BENNETT. That is the way to answer that.

Admiral MCKEE. You have to buy the 688.

Mr. BENNETT. You are not going to build any more SSN-21's than you would have 688's?

Admiral MCKEE. That is right. We can do that. We don't have a force level established for the SSN-21 but in my judgment, again this is not the Navy position—it is just my view of the world—I think it is highly unlikely we would build any more SSN-21's than we are building of the 688 class, or the previous class. That is what keeps the mix. By the time we get a number of these we would be at a position where we have to make some fundamental decisions about submarine warfare that will be in the next century. We have not yet come to grips with that.

Mr. BENNETT. Like what?

Admiral MCKEE. Like I was talking about earlier. What do you want a submarine to do in the next century? Is it the same thing you want to be doing now?

Mr. BENNETT. Do you have any ideas on that?

Admiral MCKEE. Right now submarines perform four of the six missions of the Navy. I think we will see them in the next century taking on a significantly larger load in most of those areas. I think they will do less ASW and more in the other three categories.

Mr. BENNETT. I would sure like to hear you talk about it, you make it awfully interesting.

Admiral MCKEE. I am just a garage mechanic, I am going to get in trouble.

Mr. BENNETT. What I am saying, when you are not really coming out and saying it all. It is easy to say, you know, there are some things for surface ships, you can't escape having surface ships.

Admiral MCKEE. Yes, sir. That is right.

Mr. BENNETT. You certainly couldn't move all of the material you need in a conventional war under the water.

Admiral MCKEE. That is right, you wouldn't. I am not talking about cargo ships, I am talking about warships.

Mr. BENNETT. You can't project power from a submarine can you?

Admiral MCKEE. You may be able to do it in the next century. I think we have to put aside some of the conventional wisdom and get busy thinking about it.

Mr. Bennett. How about sometime—not right now, because we are doing this thing—when we get rid of this thing, come back and talk to us.

Admiral McKee. I would be happy to. You have to understand that I am not the CNO, I am just——

Mr. Bennett. You are not yet.

Mr. Sisisky. We can arrange that.

Admiral McKee. He is the guy that is supposed to talk to you about that.

Mr. Carney. Would you be more comfortable speaking as a civilian?

Admiral McKee. I can do that, too.

That is what I brought along to show you. I am prepared to answer any questions you might have.

Mr. Spence. Admiral, I was looking at the list. *Akula* is a new attack submarine?

Admiral McKee. That is right.

Mr. Spence. And *Alfa* has been around for a while now. Are they doing much more with that now?

Admiral McKee. [Deleted.]

Mr. Spence. We don't have further evidence of a titanium hull?

Admiral McKee. [Deleted.]

Mr. Spence. *Oscar* and *Typhoon*, they are different types?

Admiral McKee. *Oscar* is a very big submarine, [deleted]. *Typhoon* is the biggest submarine in the world.

Mr. Spence. We have got one new class coming on?

Admiral McKee. One new class, that is it.

Mr. Spence. I have no other questions.

Mr. Bennett. Mr. Sisisky.

Mr. Sisisky. I don't have any questions.

Mr. Bennett. Mr. Hunter.

Mr. Hunter. I think I have asked most of my questions.

One last thing on the size, though, it looks like there is a difference in missiles. Are the bigger Soviet submarines loaded up with cruise missiles?

Admiral McKee. They can carry cruise missiles, but they are like the SSN-21. They can load the way they want to load. The SSN-21 can carry [deleted].

Mr. Hunter. How many can our *Los Angeles* class carry?

Admiral McKee. [Deleted.]

You can't mix and match.

Mr. Hunter. So the SSN-21 will have a larger capacity?

Admiral McKee. Yes, sir. [Deleted.]

Mr. Bennett. Mr. Ortiz.

Mr. Ortiz. I have no questions.

Mr. Bennett. Mr. Carney.

Mr. Carney. My schedule had the meeting for 2, Mr. Chairman. I obviously missed a half-hour of a good meeting.

Mr. Bennett. It has been a good meeting. I am serious about coming back some time and talking to us about some other things. You seem to be on the edge of some new things. We could do it informally.

Admiral McKee. I will be happy to do it. My house is paid for.

Mr. Hunter. That is a good spirit.

Mr. CARNEY. Mr. Chairman, did we touch on the report that the Admiral sent to us about the sourcing of the reactor components?

Mr. BENNETT. No, we did not touch on that.

Mr. CARNEY. I read the report. It answered all the questions. I was curious if there were any other questions that were asked about it today.

Admiral MCKEE. No, sir, nobody has brought it up. We have given it to everybody that wants to read it. It makes a reasonable case, we have been told.

Mr. CARNEY. Do we feel we are out of the woods on that, Mr. Chairman?

Mr. BENNETT. Well, I really don't know.

Mr. SISISKY. Would you refresh my memory on that?

Mr. CARNEY. Last year, on the budget authorization, we required them to provide us with a report. It was a request of Mrs. Lloyd having to do with an additional competitor.

Mr. BENNETT. Now, I didn't really identify the problem.

Admiral MCKEE. This is the report. We have two competitive firms, and the question you asked me to report on was, why didn't we expand it to make three?

Mr. CARNEY. I thought the report was excellent. Was that brought up today?

Mr. BENNETT. Mrs. Lloyd has not addressed it before this committee. I have read it some time ago. I didn't identify what you are talking about, but, as he says, we have some competition, but a question of whether or not it is a valid investment.

Admiral MCKEE. We have competition, and a fixed base of components that nobody else builds. We build them in very small numbers, and we have just enough work to keep two vendors alive.

Mr. BENNETT. I think Mrs. Lloyd is doing what every Congressman ought to do. When she has constituents or others that have brought it to her attention, she ought to bring it to the attention of the Congress to have it thoroughly analyzed and have a detached statement.

At the end, when you have done the very best to see that all these things are presented, then you have done the best you can.

You do have an obligation to bring the battle. I think she did the right thing, 100 percent.

Mr. CARNEY. Absolutely, I concur. I was just curious, since the report was delivered to my office, I thought that might have come up. I compliment you on the report, by the way.

I really did not believe I could read the whole thing at 2 this morning without falling asleep, and I did. I was looking for more, it was exciting. I am trying to get a deep water harbor right at the end of my island. They all go by my district. The only reactor I have to worry about is Shoreham.

Mr. BENNETT. How many Tridents are there ultimately going to be in the fleet? On that note——

Admiral MCKEE. Probably at least 20 and how much farther than that, I just don't know.

Mr. BENNETT. The reason you push it toward larger numbers is because it is the most secure thing we have got. It is the best thing we have got in the triad by far, and therefore, you are tempted to say that is where you ought to go, and if you found another leg of the triad that was doing real well, there wouldn't be the necessity for pushing it.

Admiral McKee. Trident ends up competing with attack submarines in the Navy, and it ought to be competing at the DOD level with other systems.

Mr. Bennett. That is a very wise statement. We don't look at it correctly.

Admiral McKee. The Trident submarine is less than 5 percent of the DOD budget. It is a highly leveraged investment, a good deal, even though the ships are individually expensive, it is a pretty good deal.

Mr. Bennett. You are not likely to get more money, but if you did, what would you do with it?

Admiral McKee. What would I do with it?

Mr. Bennett. What is your greatest need, R&D for the new SSN-21?

Admiral McKee. If we get the money programmed, we will have enough money for the SSN-21. What I would like to be doing is just what we talked about now; I need to be thinking now about radical submarine applications, and what I need to do in terms of propulsion developments to support that.

Mr. Bennett. How many people do you have working on reaching further?

Admiral McKee. This is Mark Forssell, one of my senior engineers.

Mr. Forssell. Fifteen.

Admiral McKee. Fifteen folks, that is all I can afford.

Mr. Hunter. Can you expand on that, Admiral?

Admiral McKee. To put this in perspective, the size of the fleet has been growing, and the funds needed to make sure we can continue to operate safely continues to grow along with the fleet, so my discretionary amount gets smaller and smaller. A 5-percent cut against me ends up leveraged into 35 or 40 percent—in some cases against essential research and development.

Likewise, a 5-percent increase in my budget would represent a 20- or 30-percent increase in the amount of money I can put into taking the next step.

Mr. Schafer. This morning Admiral DeMars testified basically, had we directed the effort some years ago, that we could have been at a point of building the SSN-21 earlier than you said, in 1982?

The question is that we are now kind of focusing our efforts to a ship which will be fully funded in fiscal year 1989, and against a Soviet attack submarine which appears to be accelerating, I mean, if there is any conclusion to be drawn from the *Akula*, the trend is getting worse instead of better.

Admiral McKee. Up to now they have been building a lot of different things, looking for the answer by the brute force method. [Deleted.]

Mr. Schafer. In what areas of technology or development does it appear that additional resources should be applied now, if we are trying to worry about that kind of situation?

Admiral McKee. In my own area, I can increase emphasis [deleted.]

Mr. Bennett. You got a picture of one of those?

Mr. Forssell. I don't.

Admiral McKee. [Deleted.]

Mr. Bennett. How long does that take?

Admiral McKee. To develop? About 10 years. We have a type 5, [deleted.]

Mr. Carney. We would have to build more ships.

Mr. Sisisky. You would put my shipyard out of business.

Mr. Carney. Build more then.

Admiral McKee. And we are working on this, but we really don't have the money it takes to go put—you know what I need to be doing is build a core with this in it.

Mr. Sisisky. Is there application in the industrial market for any of the stuff that you are doing?

Admiral McKee. No, because they wouldn't think that what I do is cost-effective. They don't have the shock or noise requirements that I have to meet.

Their approach is entirely different, and what I spend for longevity, they would say, we don't need that, we can refuel every year in our normal routine, and pay a lot less for it. You could sit down and run their equation and it looks like it is cost-effective.

On the other hand, I should point out that our light water breeder, which is built fundamentally the same as a commercial reactor ran for 29,000 equivalent full power hours without refueling, 29,000 equivalent full power hours.

That is a lot.

It is the longest life of any core we have ever built, so it is possible to do that, but I don't know whether the commercial guys will want it. We have done it. We have proved it. That is a commercial application, but they dont see the cost-effectiveness in it.

Mr. Carney. Do you see any return—this is not relevant to your ship, but being that you work with the industry as much as you do—do you see any return at all to commercial applications, or do you think that is history at this point?

Admiral McKee. I don't see any pressure to build anything new. The reason there is very little interest in commercial nuclear power right now—the principal reason is we don't have anybody in Government who is going to live until we run out of oil.

We are going to have to have commercial nuclear power and there is some point in time where you either commit yourself to it or you are out of it. I think it will come back.

The thing that bothers me the most is that when nuclear power comes back, it may all be built by the Japanese, the French and the Germans. The industry will be dead in this country.

Mr. Carney. What does that do for your manpower needs? If the industry itself is dead, I would imagine that it would be rather difficult to stimulate young men and women out of high school to pursue careers in this area, with the limited amount of work that you can offer industry, military applications.

How do you see that affecting your capability of attracting the best?

Admiral McKee. It doesn't have much to do with the commercial power industry. The thing that attracts young men into our program is that we give them a very vigorous technical education, and we throw them into a demanding operational situation and shove them out in the fleet. When they finish 5 years of that, they can do anything, and they are very marketable.

Mr. CARNEY. I missed my statement, I think. I don't see that as a problem, getting naval officers on the fleet. I am talking about getting qualified engineers, physicists, who are going to go into this.

Why would anybody today, given the state of the commercial industry, become a nuclear engineer. There are probably no jobs available.

Admiral McKEE. There are a lot of jobs for fixing plants, but not for building them. That never has affected us, because in our program, we have never hired engineers off the street.

We take young naval officers with technical backgrounds and bring them into our program. Mark Forssell was a graduate from Webb Institute, and he came in and said, I want to work for Naval Reactors.

Mr. CARNEY. He was a naval architect?

Admiral McKEE. Yes, sir, but I take mechanical, electrical engineers, the full range of engineering disciplines and reach into the civilian colleges and bring these guys into the Navy and raise them as nuclear engineers in my organization. So what happens on the outside doesn't affect that.

Mr. CARNEY. Who mans the other laboratory?

Admiral McKEE. They do the same thing. A guy with a baccalaureate degree in nuclear engineering isn't much more than a mechanical engineer.

I really would rather have a good mechanical or electrical engineer than a nuclear engineer, because I want them to have a solid foundation. We will put them to work in the laboratory and develop the specific nuclear competence that they need. We have been able to get those kinds of guys.

Mr. CARNEY. You are not concerned that the commercial industries—you are not concerned with the state of commercial industry.

Last year, when we questioned you about the possibility of building the diesel-powered ships for foreign markets, you were concerned that you don't have enough people that are qualified to do that work. And if you are drawing off of that pot to get into the design of a diesel submarine, it would have a negative effect on your program, and you sold me on your argument.

Now, I am saying if we don't have this commercial industry going, what will be the incentive for young men to enter this field? I am turning it around on you.

Admiral McKEE. The incentive to enter the field is still there, though just not as great.

What the commercial industry has done is turn from a construction industry into a servicing industry, and there are a lot of jobs in the service side.

There is a guy that used to be my boss that left the Navy. He is being paid a large salary to fix TVA's problem. There are big, high-paying jobs in commercial industry, but it is in getting the commercial nuclear plants well, rather than expanding them.

The principle threat to my program in terms of personnel is what is being done in the civil service. I just had a guy 65 years old who decided he was going to quit. He has been working in this program since he was a young man and stayed on and finally decided to leave. He has done almost three-quarters of all the refueling in this program, the best refueling engineer in the world. He is leaving because of changes in the civil service, and the retirement tax situation.

I have some of the best young engineers in the business whose pay is capped as is yours, and I will lose those guys.

I have guys approaching retirement age who have been promised all along that they can leave, do 30 years in my program, then go on to other things; they are now being told, some in the year of retirement, hey, you have to go 8 more. That is my biggest single problem—and guys like that are being lumped into what the conventional wisdom sees—civil service as just a bunch of guys in Washington feeding at the public trough. That will destroy our ability to operate safely unless something is done about it.

Mr. **Carney**. Tell that to W.R. Grace, not to us.

Admiral **McKee**. You haven't passed that yet.

Mr. **Sisisky**. Every year the President proposes that and we dispose of it.

Mr. **Carney**. The tax bill had provisions in it.

Admiral **McKee**. Even when it doesn't pass, it creates uncertainty in the minds of the civil service personnel. They say, why do I put up with that?

Mr. **Bateman**. That tax bill we passed cost senior-level civil service employees $20,000 or so over the first 4 or 5 years of their retirement.

Mr. **Hunter**. The Democratic majority passed that.

Mr. **Sisisky**. I don't know. It was a voice vote.

Mr. **Bennett**. Mr. Bateman has a question.

Mr. **Bateman**. I have a couple of questions.

Admiral, I was intrigued with one of your first slides about [deleted] and there was a notion on your chart [deleted].

Mr. **Carney**. A November class, that is not on there because that is not a reactor problem?

Admiral **McKee**. That was a different kind of problem that caused the loss of the ship. [Deleted.]

Mr. **Carney**. We don't classify the *Thresher* and the *Scorpion* as reactor accidents?

Admiral **McKee**. Not reactor accidents, no, sir.

Mr. **Carney**. What were they?

Admiral **McKee**. We are pretty certain that what happened in the *Thresher* was a salt water leak that let the ocean in, and gradually started filling the boat full of water.

When you bring water into the boat under high pressure, it is like steam; it comes in so fast and probably shorted out some electrical systems. That caused them to lose propulsion but they were still not flooding very rapidly. When they attempted to blow ballast to get up to the surface, the high pressure air going through a filter into the ballast tanks froze after just a few seconds of blowing, expanding air gets cold and freezes, then the boat just sank.

Scorpion is something else. We are not certain about *Scorpion*. She was coming back from a 6-month deployment in the Mediterranean, and she was completely alone when she went down as opposed to the *Thresher,* who had an escort. We knew exactly what *Thresher* was doing when she went down.

Mr. CARNEY. Was there contact with the crews during these things?

Admiral McKEE. There were voice transmissions with *Thresher* as she was going down. They are very garbled.

There was a transmission that appeared to say, "Experiencing minor difficulties. Have positive up angle. Am attempting to blow." That means the boat was like this trying to hold itself up. Then the next thing, listening on sonar, they heard ballast tanks start to blow and then stop.

The next thing was a garbled transmission which apparently said, "* * * test depth." Then there was the sounds of the boat imploding. It blew itself to pieces on the way down. All that was followed all the way through.

The *Scorpion*, was alone, nobody to listen, but [deleted] when she went down.

Mr. BATEMAN. Do they monitor them?

Admiral McKEE. We don't think so.

Mr. CARNEY. Are we picking up anything on those sites?

Admiral McKEE. No radioactivity from the reactor.

Mr. CARNEY. Do you make that public?

Admiral McKEE. Yes, sir, that is public.

Mr. CARNEY. If I may, monitoring those sites, you pick up no more radiation than the residual or background radiation, the ocean?

Admiral McKEE. Right.

Mr. CARNEY. How many reactors in both sites?

Admiral McKEE. One in each.

We went out—Mark, you can correct me—back when *Thresher* went down, there were some surveys taken and the question was asked at that time. Did losing that reactor raise the level of activity in that part of the ocean? And we publicly said, No, it did not. Let me include for the record our public statement on this matter.

[The following information was received for the record:]

LOSS OF U.S.S. "THRESHER" AND U.S.S. "SCORPION"

Two U.S. Naval nuclear-powered submarines have been lost at sea in the Atlantic Ocean. The submarine *Thresher* sank 10 April 1963, 100 miles from land in water 8,500 feet deep at latitude 41°45′N and longitude 65°00′W. The submarine *Scorpion* sank between 21 and 27 May 1968, 400 miles southwest of the Azores in more than 10,000 feet of water. The reactors used in all U.S. Naval submarines and surface ships are designed to minimize potential hazards to the environment even under the most severe casualty conditions such as actual sinking of the ship. First, the reactor core is so designed that it is physically impossible for it to explode like a bomb. Second, the reactor fuel elements are made of materials that are extremely corrosion resistant, even in sea water. The reactor core could remain submerged in sea water for decades without releases of fission products while the radioactivity decays, since the protective cladding on the fuel elements corrodes only a few millionths of an inch per year. Thus, in the event of a serious accident where the reactor is completely submerged in sea water, the fuel elements will remain intact for an indefinite period of time, and the radioactive material contained in these fuel elements should not be released. The maximum rate of release and dispersal of the radioactivity in the ocean, even if the protective cladding on the fuel were destroyed, would be so low as to be insignificant.

Radioactive material could be released from this type of reactor only if the fuel elements were actually to melt and, in addition, the high-strength, all-welded reactor system boundary were to rupture. The reactor's many protective devices and inherent self-regulating features are designed to prevent any melting of the fuel elements. Flooding of a reactor with sea water furnishes additional cooling for the fuel elements and so provides added protection against the release of radioactive fission products.

Radiation measurements, water samples, bottom sediment samples and debris collected from the area where *Thresher* sank were analyzed for radioactivity shortly after the sinking and again in 1965 by various laboratories. Similarly, sea water and bottom sediment samples taken near *Scorpion's* hull were analyzed for radioactivity. In 1977, followup samples of water, sediment, marine life and debris were collected from the immediate *Thresher* debris areas. In 1979, followup samples of water, sediment, marine life and debris were collected from the immediate *Scorpion* debris areas. None of these samples showed any evidence of release of radioactivity from the reactor fuel elements in either *Thresher* or *Scorpion*. However, cobalt 60 released from both *Thresher* and *Scorpion* coolant systems was detectable at low levels in sediment samples in the debris areas. The amount of cobalt 60 radioactivity in these samples was small compared to the naturally occurring radioactivity in the sediments. Based on the samples, less than 0.001 curie of cobalt 60 was estimated to be present in the sediment at either site. Cobalt 60 was not detectable in samples of water, marine life or debris. Thus, the *Thresher* and *Scorpion* have not had a significant effect on the radioactivity in the environment.

That gets me back to my original statement. What we do for a living is not an inherently safe occupation. We live with acceptable risk, and it is made an acceptable risk only because of the technical competence and integrity of a handful of guys like Forssell and his crowd at sea, the whole thing is in the hands of young men, many of which are just out of high school.

You have seen them on those submarines. There is a point beyond which we cannot reduce costs. That is why Gramm-Rudman and all that stuff scares me to death. If Gramm-Rudman ran its course the way it is designed to, if you all did nothing and let matters take its course, I would be out of business in 5 years.

Mr. BENNETT. We have to be as responsible as those youths that are running our submarines, and are so dedicated.

That is the end of the meeting.

[Whereupon, at 3 p.m., the subcommittee adjourned.]

RESEARCH, DEVELOPMENT, TEST AND EVALUATION UPDATE BRIEFING

House of Representatives,
Committee on Armed Services,
Seapower and Strategic and
Critical Materials Subcommittee,
Washington, DC, Monday, February 24, 1986.

The subcommittee met, pursuant to call, at 2:10 p.m., in room 2212, Rayburn House Office Building, Hon. Norman Sisisky, presiding.

STATEMENT OF HON. NORMAN SISISKY A REPRESENTATIVE FROM VIRGINIA

Mr. Sisisky. The subcommittee will come to order.

This afternoon the subcommittee meets in closed session to receive a classified briefing on Navy research and development programs. Of particular interest to the subcommittee are those research and development programs that are planned to go onboard the ships we authorize this year.

Briefing the subcommittee today is Vice Adm. Albert J. Baciocco, Jr., Director of Navy Research, Development, and Acquisition.

Admiral, it is nice to have you here, and you may proceed.

STATEMENT OF VICE ADM. ALBERT J. BACIOCCO, JR., U.S. NAVY, DIRECTOR OF RESEARCH, DEVELOPMENT, AND ACQUISITION, OFFICE OF THE CHIEF OF NAVAL OPERATIONS; ACCOMPANIED BY CAPT. J. HARRY MAIXNER

Admiral Baciocco. Thank you, Mr. Chairman. Good afternoon. It is a pleasure to again appear before the Seapower Subcommittee to brief you on a number of our R&D programs.

Today, I will provide you a brief overview, as I did last year, of key Navy research and development and apprise you of the progress we have made in several areas. I will also brief you on the direction we are heading.

Last year, as you will recall, I emphasized our advances in antiair warfare systems, and the Aegis system in particular. This year I intend to follow up in this important area, and also bring you up to date on submarine development and antisubmarine warfare programs.

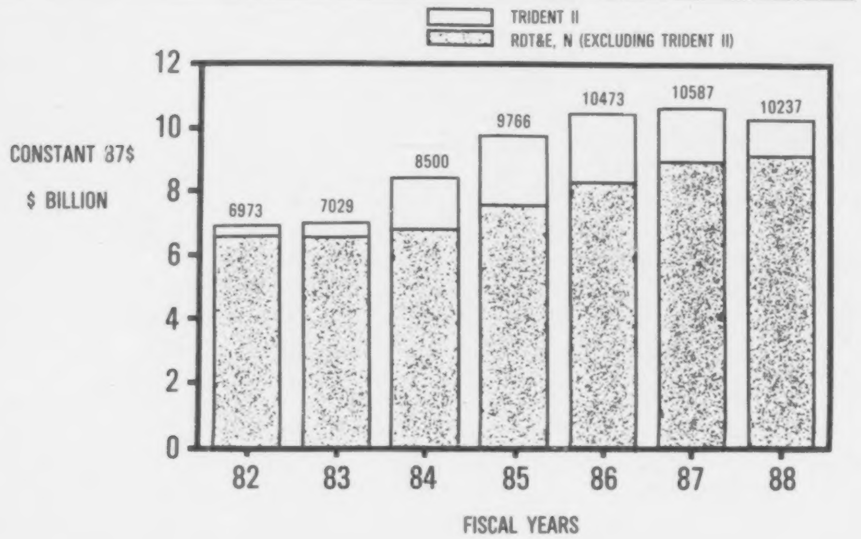
You and the committee members are familiar with the growing submarine threat posed by the Soviets. The CNO stated in his article on the Navy's maritime strategy in the January 1986 issue of Naval Institute Proceedings that antisubmarine warfare remains one of the most complex and difficult challenges facing us today and in the future.

Over the past year the Navy has been conducting a very systematic look at the future ASW problem. It is clear that a number of new developments will be necessary if we are to retain our ASW superiority into the future. My briefing today will discuss some of these out-year development thrusts and the direction that our R&D community is taking to cope with the ASW problem.

The briefing will lead off with a quick review of the fiscal year 1987 RDT&E budget request, then move on to major ASW and AAW programs of interest to the committee. It will conclude with a discussion of our Surface Ship Survivability Program and the Navy's conduct of operational testing.

The Navy RDT&E Program seeks to strike a balance between what is technically possible and what is financially affordable in meeting the requirements for a 600-ship Navy.

NAVY RDT&E



The slide you see before you, sir, is, in constant fiscal year 1987 dollars, a display of the Navy RDT&E budget since 1982 to fiscal year 1988. The top part depicts the portion of Navy RDT&E dollars that have gone to our strategic program, the Trident II D-5 missile. The figures above the stand pipes are the actual total dollar amounts appropriated through fiscal year 1986. Although not specifically noted on this slide, in fiscal year 1987, our requests for the Trident II/D-5 Strategic Missile Program is $1.6 billion. The request for the remainder of the R&D programs is $9 billion.

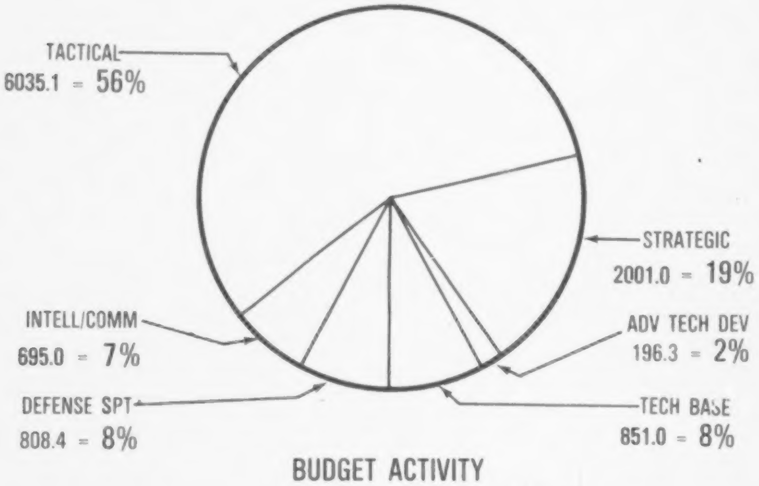
Our budget request for fiscal year 1987 totals $10.6 billion, about 10.2 percent of Navy TOA. It is important to notice that this is about $700 million less than our fiscal year 1986 budget request. We accomplished this reduction through better management and acquisition initiatives.

You will also note that our request is very close to the amount appropriated last year. One further point worth noting is that the

Trident II R&D requirements are beginning to decrease as this program approaches maturity.

NAVY RDT&E

FY 1987 BUDGET REQUEST = $10,586.8M

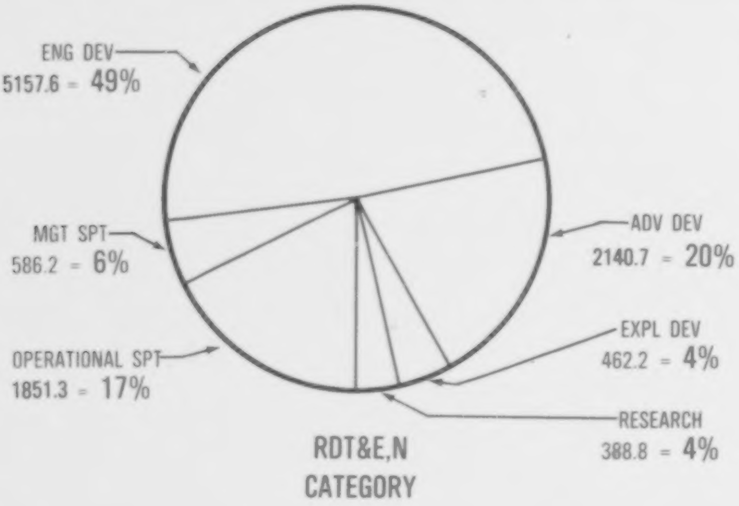


Our budget request can be viewed from three perspectives. First, by budget activity. The largest portion is devoted to tactical programs, 56 percent. This includes research and development programs such as the SPY-1D Radar and the SSN-21 research and development effort.

Strategic programs receive about 19 percent of the budget. These resources are used predominantly for the Trident II D-5 missile system. The remainder goes into the technology base, advanced technology development, intelligence and communications, and defense-wide support.

NAVY RDT&E

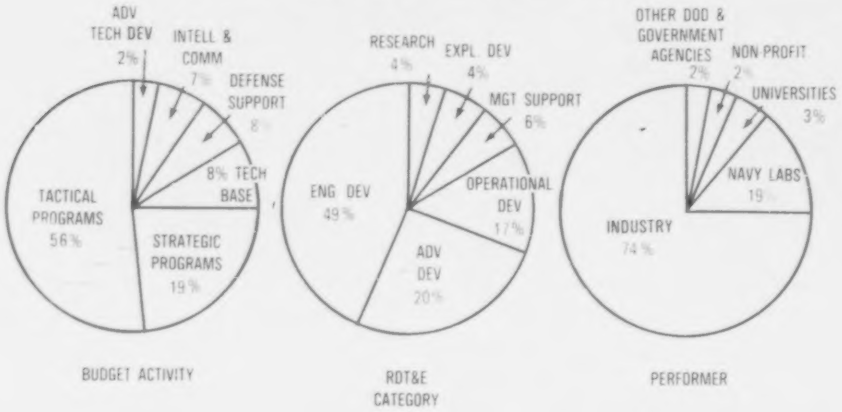
FY 1987 BUDGET REQUEST = $10,586.8M



Another way to look at our request is by RDT&E category. Here the majority of funds, 49 percent, go to engineering development programs such as the Sealance, the MK-48 ADCAP, submarine combat systems which we will discuss today. Programs in advanced development comprise about 20 percent of our program, and operational development programs—that is, R&D improvements to operational programs such as SURTASS account for 17 percent of the overall amount. The remainder is devoted to efforts in basic research, exploratory development, and management support.

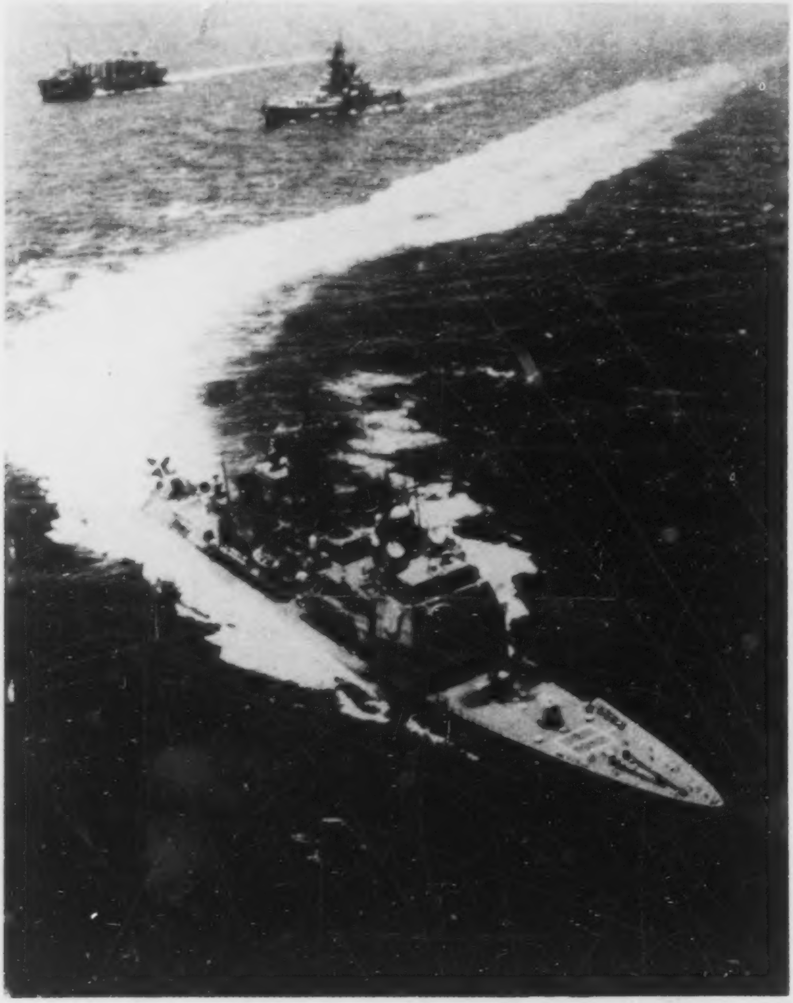
NAVY RDT&E

FY 1987 BUDGET REQUEST = $10,586.7M



Finally, one can view the budget request in terms of performers. Here you see that industry accomplishes the majority of the work, 74 percent, with Navy labs at about 19 percent. The remainder being performed in universities and other Government agencies.

Mr. Chairman, R&D is a dynamic environment characterized by hard choices in the face of ever-changing requirements. At any time, we are improving systems deployed in the past, applying R&D to present developments, and launching efforts to contend with the future threat. This approach to R&D is predictive in nature, as opposed to reactive. To do otherwise would result in fielding systems that lag the threat.



The outcome of our R&D efforts must be the production of systems that anticipate the threat and are adaptable, reliable, and maintainable. But they must also be affordable. Thus, before we leave the budget, I want to briefly discuss acquisition policy.

The way we do business in setting the stage for acquisition in the Navy is changing. As you are aware, Secretary Lehman has revitalized the acquisition process and forged a policy that is focused on increased discipline. We are increasing the amount of our resources awarded competitively and those being placed into fixed-price-type contracts, and we are making use of competition and fixed pricing earlier in the research and development process than ever before. Fixed-price R&D contracts have resulted in substantial cost avoidance for the Navy. For example, the original price estimates of the V-22 Osprey, the T-45 Trainer, the F-14D and the A-6F upgrade totaled over $4.1 billion. The actual fixed prices for these programs totaled $3.1 billion. Cost avoidance amounted to more than $1 billion. In addition, we are looking to the contractor for investment in tooling and test equipment in return for fair and reasonable profit.

The other side of the coin is better management and accountability within the Navy. The establishment of the materiel professional community has played an important part in providing a viable career path for those working in acquisition and procurement. Since we established the materiel professional community slightly over 1 year ago, over 900 officers, from commander to full admiral, have been so designated. Approximately one-third of our flag officer billets are now set aside for materiel professionals.

We are rapidly building a professional force with the education and experience required to make our acquisition managers capable, skilled business professionals with the warfare background necessary to properly manage weapons systems. To keep this program on track, no procurement or acquisition billet may now be filled by other than a materiel professional without a personal waiver from the Secretary of the Navy.

We are seeing the results: Cost savings, improved program schedules, enhanced quality, and an overall increase in efficiency. The real advantage of the Secretary's policies in addition to cost growth avoidance is that they stabilize the budget to a large degree and allow us to budget tomorrow's dollars toward tomorrow's development efforts rather than, as often has been the case in the past, to pay for today's problems.

Now that I have reviewed the budget and the acquisition process I would like to shift our focus to major Navy programs of interest to this committee. And I would like to introduce Cap. Harry Maixner of my staff, who will present the remainder of the briefing, sir.

ANTISUBMARINE WARFARE PROGRAMS

Captain **Maixner**. Good afternoon, Mr. Chairman. As you and your committee are well aware, the Soviet submarine force is the largest in the world. It is becoming acoustically quieter and capable of operating far from their home ports for extended periods of time. [Deleted] their weapons technology is improving.

Growing concern over these advances made by the Soviets prompted the CNO to launch what we refer to as the CNO Urgent ASW Research and Development Program. The thrust of this program is the development of advanced ASW technology that will allow us to retain our ASW advantage over the Soviet threat into the 21st century.

We are developing what we are calling an ASW master strategy, the first part of which explores the feasibility of new concepts and their application to future ASW sensor and weapons systems. These conceptual exploratory efforts will include at-sea testing and must be completed before we can make a decision regarding development of a suitable and acceptable set of future ASW systems.

The critical technologies that we view as necessary to pursue, if we are to retain our ASW advantage, [deleted].

This year we will be continuing efforts in developing and refining [deleted].

We are looking toward this program to provide us with a conceptualization that will lead to the development of systems having known effectiveness and reduced developmental risk. We are seeking both passive and active systems capable of detecting the submarine threat of the 1990's and beyond.

I am first going to talk about surveillance systems in this afternoon's discussion. The first surveillance program is the fixed distributed system, which is an advanced undersea surveillance system. FDS will incorporate improvements in the area of undersea surveillance that will permit us to retain our acoustic detection capabilities against the quieter Soviet submarine.

By taking advantage of fiber optic technology developed in our laboratories, we expect to be able to deploy extensive fixed distributed surveillance systems at affordable cost. FDS will provide [deleted].

Last year we reported to you that the [deleted].

The surveillance towed array sensor system, or SURTASS, is at sea today. [Deleted]. This system provides a mobile, long range, passive capability [deleted].

Additional signal processing is being incorporated as a block upgrade to [deleted].

P-3 MODERNIZATION PROGRAM

FY 1987 REQUEST:
$96.9M

- PURPOSE/PERFORMANCE
  - INCREASES ESM/ECM CAPABILITY
  - INCREASES GROWTH AND FLEXIBILITY THROUGH RADAR, COMMUNICATIONS, DISTRIBUTED BUS ARCHITECTURE AND EMSP
  - KEEPS P-3 FLEET'S WAR FIGHTING CAPABILITY ABREAST OF THREAT TRENDS
- FLEET INTRODUCTION/INVENTORY
  - deleted
  - deleted

An adjunct to our surveillance system is the P-3 maritime patrol aircraft. We have selected a P-3 modernization effort as the most fiscally attractive alternative to updating our maritime patrol capabilities.

This aircraft has been in service for over 25 years and has undergone several major improvements over its lifetime. The P-3 Update III Program introduced into the fleet in 1984, expanded the P-3's sonar buoy processing capability from [deleted] and introduced the UYS-1 advance signal processor.

The P-3 Update IV programmed to reach the fleet [deleted] will upgrade the P-3's avionics, which include its radar, electronic support measures, communications, and acoustic processing. The P-3 Update IV will be our first ASW platform to use the significantly higher processing power of the Navy's new USY-2 Enhanced Modulator Signal Processor [EMSP].

This allows us to handle the increased number of ASW sensor inputs and processing requirements. The end result will be more effective data handling, increased reliability, and improved combat performance.

Admiral Baciocco. If I may just for a moment go back and review a couple of the points that Captain Maixner has made with regard to ASW. On a previous slide you saw four technology areas that we are working on as part of our CNO urgent ASW initiatives. These initiatives included [deleted]. All of these future systems, have increased processing requirements.

What we are facing, as you have heard is a much quieter threat. Soviets have as we have done since the 1950's to today, [deleted].

They have quieted [deleted].

The programs that we have outlined here address that in part. The ASW initiatives that the CNO has encouraged us to carry out, albeit not programs yet, are building on fundamental concepts and technologies, that will allow us to have the necessary tools in hand to exploit with the same, or nearly similar capability as we have today [deleted]. It is something that we will be seeking support on, and something that we will be devoting significant resources to over the next decade.

I would like to stress one other point. Captain Maixner mentioned that these ASW initiatives require much at-sea testing. I believe you will see over the next 3 or 4 years a significant amount of at-sea experimentation, as well as testing, of, perhaps not equipment, but of concepts in order to gain the knowledge we need to proceed with efforts like [deleted] which are very, very new for us.

Captain Maixner. I would like to shift subjects now and talk about mining. We have made considerable progress in our Mine Improvement and Development Program since Congress directed a review in 1984. In response to congressional guidance, the Navy conducted a major investigation that took over 2 years. We determined the future mining requirements and defined future systems for our mining programs. The effort resulted in four major conclusions, as can be seen on this Vu-Graph.

This effort confirmed that mining strategy [deleted] and that it should be [deleted]. The requirements analysis and technical assessment resulted in two major recommendations. First, we must improve our stockpile by improving the effectiveness of our existing mine inventory. Second, we must develop a new mine for use [deleted].

Our plan is shown on this Vu-Graph. Improvements to our current mine inventory will be accomplished by [deleted]. The [deleted] are MK 80 iron bombs that have been modified with a kit so that they can be employed as mines. The MK 80 series fuze modification kits will be upgraded with [deleted]. These will be more [deleted] in the mine. This effort is called the Quickstrike Program. Improvements are also planned in the Captor mine. The Captor is the most modern mine in our inventory, and the free world's only deepwater mine. Captor is being investigated [deleted] as well. To date, testing indicates that Captor has a high potential [deleted] weapon. Captor's detection performance has been as good in [deleted].

We are also investigating methods to increase the [deleted] effectiveness of the submarine-launched-mobile mine. The new mine, and the primary product of our new generation mine effort, is called the Attack Sea mine. Its major characteristics are: [Deleted.]

A pictorial view of how this mine will function is shown here. In-water tests of several acoustic and passive-active sensor types were conducted in the spring of last year. The target was a U.S. submarine, and the purpose of the test was for risk reduction preparatory to beginning actual mine development.

Admiral BACIOCCO. Each year I meet with my counterpart in the [deleted]. These talks are called senior national representative talks. We examine our acquisition programs, and look for opportunities for cooperation where cooperation makes sense.

I met in November of this year, shortly after the Attack Sea mine concept was solidified within our Navy; talked to the [deleted], about it and found that they, too, were in approximately the exact position in developing what they called the [deleted].

As a result, we have reviewed both our requirements and their requirements and have found them to be nearly identical. We find that they have three contractor teams. They had three contractor teams in a concept definition type of competition. They have down selected to two teams. Each of those teams down selected on the [deleted] side have U.S. counterparts—Honeywell and Goodyear. We are now looking very strongly at going into a cooperative development with the [deleted] taking advantage of the help that the Nunn amendment gives us.

I think here we really have a program that is a natural. It will be very good for our mine warfare community, and I think it will guarantee that we will proceed with a development that will be successful.

Mr. SISISKY. We have a question.

Mr. CAVAIOLA. Admiral, what benefit will the Attack Sea mine provide that the existing Captor mine does not already provide?

Admiral BACIOCCO. Go to the previous slide will you, please? As you can see, Captor is primarily designed to be a deep-water mine. [Deleted.]

In the [deleted].

Furthermore, we don't need some of the capability inherent in Captor, which is for deeper waters. It can be a relatively simple mine.

Mr. CAVAIOLA. So do you think it will be less expensive?

Admiral Baciocco. Oh, absolutely. Yes, sir.

That was a long answer. I could have come right to that. I apologize.

Captain Maixner. In summary, then our requirements are established———

Admiral Baciocco. It will be particularly less expensive if we codevelop it with the [deleted]. Their time scale is similar to ours, as well as their objectives and I think we can make it a very attractive program for both sides.

Mr. Sisisky. You are talking about a [deleted] development span?

Admiral Baciocco. No, sir.

Mr. Sisisky. You said [deleted].

Admiral Baciocco. As a general statement; yes, sir. If we went with a joint development, we would go into Milestone 1 [deleted], and have about [deleted] of demonstration and validation. That would take us to [deleted]. There would be [deleted] of full-scale engineering development. You would IOC with the first group of mines in early [deleted]. However, by the time you built enough to fill out your inventory it would be, probably, [deleted] would be a general statement of when you would have the full inventory.

Captain Maixner. In summary, then, our requirements are established, the stockpile improvements have been defined, our needed developments are in progress, and we are aggressively pursuing a cooperative program with [deleted] in development of the Attack Sea mine.

Looking at our submarine force, we are incorporating significant improvements into the SSN-688 class submarine that will allow us to maintain the tactical advantage against the future Soviet submarine threat.

The most significant of these improvements are [deleted]. With these modifications the improved SSN-688 will be [deleted].

The vertical launch system, shown here as it looks on the SSN-719, will provide it and follow-on submarines of the class increased firepower.

Mr. Chairman, please notice up here in the bow area of the submarine there are [deleted] open hatches with their covers extending upward. Those are the vertical missile tubes in the forward main ballast tank area. They provide for the capability to carry and to launch [deleted] Tomahawk cruise missiles. This increases the submarine's combat capability against surface combatants, as well as adding to their contribution to the total U.S. land attack capability.

Commencing with SSN-751, the first of the truly improved SSN-688 class, [deleted] will be incorporated through the use of [deleted]. Again commencing with SSN-751, [deleted] is achieved through the use of [deleted].

The BSY-1 submarine combat system, formerly called Subacs, will provide improvements in combat system performance through the integration of a number of new systems, including a [deleted].

Increased reliability, maintainability, and availability are major objectives in this program. The SSN-688's authorized in fiscal year 1983 will be the first to get the BSY-1.

Mr. Chairman, as you are aware, we were directed by Congress to establish a cost ceiling on the Subacs basic full-scale engineering development contract, as well as develop competition for the SSN-21 combat system. This has been accomplished with schedule penalties established and Government liability limited above the ceiling price.

The Subacs Program was restructured into two separate programs: The BSY-1 and the SSN-21 combat system. To provide better management of the programs, they were placed under a senior Naval officer with significant program management experience.

The SSN-21 combat system will include combat capability improvements such as the [deleted].

A contract has been let to a competitive team for SSN-21 combat system design definition. We intend to maximize the competition throughout the acquisition process for this program. The design definition phase will last 2 years. This compares very favorably to that required to develop previous submarine combat systems.

Mr. **Sisisky**. Excuse me. Are we going to be able to backfit 688's?

Admiral **Baciocco**. Not with the SSN-21 combat system itself, but with the capabilities of the SSN-21 combat system. As you know, the U.S.S. *Augusta* now has a [deleted]. We will be able to do that. However, we have not made the decision to do that, sir, at the present time.

Captain **Maixner**. This program allows sufficient time to install these systems into the SSN-21's that we are planning for the fiscal year 1989 authorization.

The SSN-21's will incorporate the technology and systems capability that will ensure we retain today's margin of qualitative superiority against tomorrow's threat. The SSN-21 ship design considerations and systems capabilities will be focused on [deleted]. Each of these will contribute to its improved overall mission capability.

Quieting continues to be of primary importance. As a result of our research and development efforts, the SSN-21 [deleted].

Admiral **Baciocco**. I might add, Mr. Chairman, that, as you know, last year we had a single program manager, Admiral Curtis, who was the program director for the SSN-21 submarine and for the SSN-688 and SSN-21 Submarine Combat Systems (the Subacs).

As I reflect on what we were doing then and look at what we are doing now, independent of the problems, the difficulties we had with our contractor, with the technology, and with program management Subacs, the designation of separate project managers—one for the combat systems and two for the submarines—is going to pay us great dividends. We are going to have better combat systems, because the span of control is so complex that it is a full-time job for one man. In addition, the SSN-21 is going to be a better submarine because Admiral Curtis now is able to devote his full time to the other submarine systems.

We were talking recently and we both feel that we are going to just get so much more for the money this way. It is going to be a better ship than it would have been.

Mr. **Schafer**. The combat system that goes on the improved 688 delivers—that is a 1983 ship and it delivers about——

Admiral **Baciocco**. It delivers about 1987.

Mr. **Schafer**. 1987.

Admiral **Baciocco**. Yes, sir.

Mr. SCHAFER. The combat system that goes on the SSN-21, that is a 1989 ship, delivers in the 1994 timeframe, so it is 7 years apart, roughly.

Admiral BACIOCCO. Yes.

Mr. SCHAFER. What, simply, are the differences between the two systems? What will the SSN-21 Combat System do that the improved 688 won't?

Admiral BACIOCCO. The UYK-43 computer will be used both in the combat side and the sonar side. You will recall that Subacs basic, now the BSY-1, was primarily an upgrade to the sensor system. [Deleted.]

It focused on [deleted]. In the past, we really haven't had a carefully designed [deleted].

We also put a few new displays in, but basically the focus was on the sensor system.

The SSN-21 Combat System, like the old Subacs "B," integrated the combat system and the acoustics subsystems. We put major investments into operability so that we will be able to handle the vast amount of information that is going to be available to us and handle it well. We figured that there is about an [deleted] that we could achieve. In other words, for the same target strength through the same sensors, we can make the submarine some orders of magnitude more effective just by allowing the operators to handle the data better and more efficiently. That is probably the big difference in the SSN-21.

The SSN-21, of course, [deleted]. It has tremendous growth potential, and the SSN-21 Combat System will be able to grow with that submarine well into the next century.

We have a short film on the status of the SSN-21. You have not seen this before. This shows where the R&D dollars have been going in the SSN-21, and is an update right to last week.

[Film shown.]

Admiral BACIOCCO. I might add, you saw in the movie the reference to the large-scale vehicle, which is what we must use today to test [deleted]. We have in our fiscal year 1987 budget request some $7 million which would lead to the development—excuse me—to the construction of what we call a [deleted].

This program, the [deleted] is really a [deleted]. It is particularly important in submarines.

The total procurement over 3 years in R&D is $45 million, and we would have it on the line in time to use for testing the design that is developed for the *Seawolf* submarine.

Mr. SISISKY. How big is that thing for $45 million?

Admiral BACIOCCO. It is large, sir.

Mr. SISISKY. It is horrendous.

Admiral BACIOCCO. It is large. It looks like a wind tunnel. It is quite large.

Mr. SCHAFER. A section is [deleted]?

Admiral BACIOCCO. [Deleted] which is large. The Secretary of the Navy has caused the R&D community to carefully examine this program. When the lab first came in with a request 2 years ago it was $100 million. It is now down to $45 million and all the frills are eliminated. The Secretary has given us the go-ahead.

Mr. SISISKY. What do you use now?

Admiral BACIOCCO. Right now we have to build models. We work with a one-twentieth model which is very, very small. When one takes a [deleted] that may be a foot or less than a foot and expands that up to something that is 15 feet in diameter, it is very, very difficult, if not impossible to scale.

We commit a tremendous amount of money into [deleted] design each year, and this will be a very important research tool. It will be the biggest one in the world.

Mr. CAVAIOLA. Admiral, where do we stand in the development of the [deleted] SSN-21?

Admiral BACIOCCO. [Deleted] has been unfunded for the last couple of years, except for a little bit of continuing work. We are at a milestone in that, in that we have done everything we can do short of building a hull section and testing that, or cycling that at sea.

That program to do that will be funded in the 1988 budget. That is what is planned right now, which would put a section on the *Dolphin*, our experimental submarine that is out at the Naval Ocean Systems Center in San Diego, and would allow us to build an [deleted] SSN-21 class submarine [deleted].

As you know, the design of the *Seawolf* is [deleted]. So if you decide that you want to make it [deleted] and have it at [deleted] test depth versus [deleted] as presently designed, all you have to do [deleted]. You don't have to redesign. You don't have to draw a new plan or anything. It is all set to take it. So we would be looking at a [deleted] authorized ship, which would be the first *Seawolf* class to take it.

Mr. SCHAFER. What is the price tag to build this test section? [Deleted] what is the price tag?

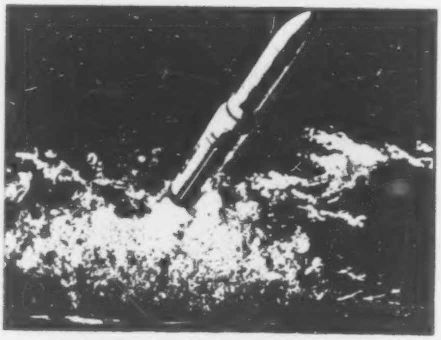
Admiral BACIOCCO. I don't know, but I can tell you. We will provide it for the record.

[The following information was received for the record:]

The cost to build, fabricate and install the [deleted] section on U.S.S. *Dolphin* (AGSS-555) for testing will be about $35 million.

Captain MAIXNER. Now that we have taken a look at *Seawolf*, let's look at some of the weapons systems that she will employ.

SEA LANCE



FY 1987 REQUEST:

$118.4M

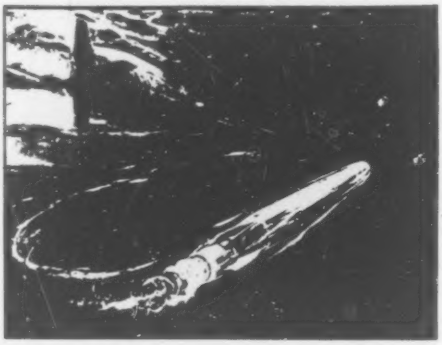
- QUICK REACTION TACTICAL ASW WEAPON FOR SUBMARINES
  - REPLACES SUBROC
  - DELETED
  - DELETED
  - DELETED
  - BASELINE PLANNING INVENTORY OBJECTIVE

This slide shows the ASW standoff weapon, or *Sea Lance,* which will eventually replace the existing SUBROC weapons system.

Sea Lance will become the submarine primary long-range ASW weapon. It will be initially configured to carry a [deleted].

Sea Lance is an encapsulated [deleted].

MK 48 ADCAP TORPEDO



FY 1987 REQUEST:

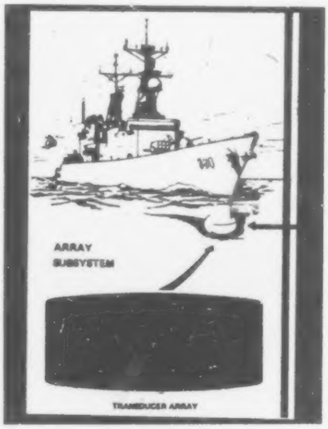
37.9M

- PRIMARY SUBMARINE LAUNCHED CONVENTIONAL ASW/ASUW TORPEDO
  - DELETED
  - DELETED
- INITIAL FLEET CAPABILITY D
  - TOTAL INVENTORY PLANNED DELETED

The MK-48 advanced capability torpedo, or ADCAP, will be the primary antisubmarine and antisurface combatant torpedo through the year 2000. ADCAP will regain the lost effectiveness of the MK-48 torpedo against the newer, quieter Soviet submarines. It will significantly improve our warfighting capability [deleted] provide improved sensing capabilities, and [deleted] control of the torpedo [deleted] ensures our ability to easily and quickly upgrade its capabilities against Soviet threat submarines of the future.

We are well along in developmental testing and have already completed some initial operational testing. The results to date are encouraging, and OPEVAL is expected to occur later this year with our goal beign fleet introduction in [deleted].

AN/SQS-53C SONAR



- SECOND PHASE OF PROGRAM TO IMPROVE AN/SQS-53
  - INCREASED RELIABILITY AND MAINTAINABILITY
  - REDUCED SPACE AND WEIGHT
  - IMPROVED PERFORMANCE deleted
- ENTERS FLEET IN deleted IN DDG-51

FY 1987 REQUEST:
$26.5M

At this point I would like to move into the surface ASW sensors and weapons programs. The primary development is the SQS-53C sonar, which will be installed on the 29 *Arleigh Burke* destroyers. The SQS-53C will also be backfitted on many of our combatants such as the *Spruance* class and the *Kidd* class destroyers. It is also a candidate for backfit on the CG-47 Aegis missile cruiser.

The SQS-53C will yield improved active performance in a convergence zone environment while significantly reducing space and weight requirements. Digital technology will vastly improve reliability, maintainability and supportability.

The first SQS-53C sonar will enter the fleet in 1989.

MK 50 TORPEDO

FY 1987 REQUEST:
$148.8M

- REPLACEMENT FOR MK 46 TORPEDO TO KEEP ABREAST OF THREAT
  - DELETED
  - DELETED
  - DeLeTeD
- FLEET INTRODUCTION IN FY Deleted

The MK-50 advanced lightweight torpedo is a replacement for the MK-46 torpedo presently carried on both our surface and air platforms. Soviet improvements in submarine performance and design necessitate the development of this torpedo.

The MK-50 will have superior performance characteristics that will enable it [deleted].

We have done a lot of testing on the [deleted]. As we discussed last year, we are very satisfied with the [deleted] MK-50 torpedo's [deleted]. This [deleted].

We expect to introduce this weapon into the fleet in [deleted]. A continuing product improvement program for the MK-50 [deleted].

We do have $7 million in the advanced development line for this torpedo to continue work in [deleted].

Mr. SISISKY. Did I hear you correctly? [Deleted.]

Admiral BACIOCCO. No, sir. You may recall the movie we had last year. The toughest submarine [deleted].

So if you take the worst case, where the [deleted].

The advanced concepts we are looking at are a [deleted].

Mr. SISISKY. Is that why you are going to put [deleted].

Admiral BACIOCCO. No, sir.

Mr. SISISKY. Then are you going to put——

Admiral BACIOCCO. [Deleted.]

I think it is important we have the deterrent in *Sea Lance.* It allows us, also, [deleted].

Mr. CAVAIOLA. I guess I come at this from a view that somehow the MK-50 [deleted].

Admiral **Baciocco**. [Deleted]. The first driving issue was to develop a replacement for Subroc. If you recall, Subroc was introduced in the eary 1960's. It has had its life extended significantly over the last 10 years.

We started the development with the [deleted]. They do all the design work [deleted]. They share the costs, I might add.

Traditionally, where we have had a [deleted]. Generally you lead it with [deleted].

We have preserved the interfaces with the MK-50, and of course, the interfaces with the MK-50 weren't that clear when we started that development. When we started *Sea Lance* MK-50 had not gone into full-scale engineering development yet.

Mr. **Sisisky**. You may continue.

Captain **Maixner**. Next, let's discuss the vertical launch ASROC. It is a replacement for the current antisubmarine rocket. The vertical launch ASROC will provide an intermediate range, all-weather quick-reaction antisubmarine weapon delivery in the CG-47, DD-963, and DDG-51 Class ships, those that are equipped with the MK-41 vertical launch system.

This program also provides for the [deleted].

Mr. **Sisisky**. Excuse me. If you don't mind, Admiral and Captain, I would ask the committee, since we are going through all these weapons, if you have any questions, because you may forget something, I would ask them as they come up. If you don't mind doing that. Because I think we'll forget.

Admiral **Baciocco**. Not at all. I would welcome that, sir.

Mr. **Sisisky**. Particularly to explain.

Mr. Bateman.

Mr. **Bateman**. Yes. What is the range for this ASROC?

Admiral **Baciocco**. [Deleted.]

Captain **Maixner**. One of our greatest ASW concerns is, [deleted].

With the submarine threat [deleted] we were required to rethink our torpedo defense policy. This resulted in a proposed revision of the Surface Ship Torpedo Defense Program.

We have recently completed at-sea testing of the [deleted].

The [deleted]. Based on these successful tests and on the recommendations from a recent study of the program, conducted by the Naval Studies Board of the National Academy of Sciences, we are proposing a redirection to the SSTD Program.

This program was originally conceived to include a [deleted].

The redirection that we are proposing will accelerate the [deleted].

Mr. **Hunter**. What does that mean if you have got a torpedo coming in at you? How are you going to try to counter?

Admiral **Baciocco**. Let me explain if I may, sir. The first thing you are going to do, is to detect it, you then have the chance to maneuver and choose the killing ground or the countermeasures ground for the torpedo.

Mr. **Hunter**. You are still going to use a [deleted]? That is not clear under your thing up there. It is still going to be [deleted]?

Admiral **Baciocco**. Detection. Yes, sir.

Mr. **Hunter**. OK. You are going to see the torpedo coming in at you.

Admiral **Baciocco**. [Deleted.]

You will then be able to get a [deleted]. You want [deleted] to do that, and I will get to that in a minute.

Mr. **Hunter**. So you are [deleted].

Admiral **Baciocco**. No, sir.

Mr. **Hunter**. You are talking about, basically, [deleted].

Admiral **Baciocco**. Yes. But, if I may, ideas on surface ship torpedo defense have been around for years. They have always gotten too hard; too tough to accomplish, and thus too expensive. In that people said: All right, I have a [deleted]. If I do see them, I can maneuver. So I want to detect those. That gives me an advantage. Second, I have the [deleted]. And [deleted].

The third type is [deleted].

So detection system is important. We have run some tests [deleted]. We didn't think we could [deleted].

We said, all right, if I can detect, if it is a [deleted].

But also we will have a deleted which will allow us we think, to [deleted]. We have gained one other thing.

If we know it is coming, we can maneuver. We can put the [deleted]. Then we have selected a battleground that is maybe [deleted]. Once I can do that it becomes very interesting and [deleted].

Mr. **Hunter**. That you [deleted].

Admiral **Baciocco**. [Deleted]. As a matter of fact, it is that aspect of the program that the National Academy of Sciences has encouraged us to take a new look at. Again, we are looking at this with the [deleted]. They are interested in this. We have started an information exchange project, and this again may be a [deleted].

Mr. **Hunter**. Thank you. Thank you, Mr. Chairman.

Captain **Maixner**. Admiral Baciocco covered the rest of my notes on this particular portion of the brief, and at this time I would like to shift over the the antiair warfare section of today's discussion.

ANTIAIR WARFARE PROGRAMS

Paralleling the challenges that we face in ASW, the antiair warfare threat continues to maintain a trend of increasing sophistication. [Deleted].

We have convincing evidence that the Soviets have the capability to [deleted].

This year's budget reflects the action we are taking to counter the AAW threat. The Navy is working to improve present fire control systems in missiles with product improvements and also expanded tactical capabilities. We seek to exploit the synergism available from the Aegis system, gain increased firepower [deleted].

GUIDED MISSILE CRUISER - CG-47

Mission:

To destroy enemy aircraft, missiles, submarines and surface ships in order to prohibit the employment of such forces against U.S. forces.

FY 1987 REQUEST:
$38.7M

CHARACTERISTICS

			OFFICER	ENLISTED
		CREW:	33	362
LENGTH:	563 FT	BEAM:		55 FT
NAV DRAFT:	31 FT	DISPLACEMENT:		9,600 Tons
PROPULSION:	Gas Turbine	SPEED:		30+KTS

WEAPONS: AEGIS Combat System, Vertical Launch System SM-2 MR, 2 5"/54 Guns, TOMAHAWK, HARPOON, TORPEDOES, Close in Weapons System (CIWS), LAMPS MK III Helicopter, AN/SLQ32 (V3), SRBOC

You are very familiar with the exceptionally capable CG-47 class Aegis cruiser. Four of these ships are at sea now, and the fifth, *Bunker Hill* (CG-52), will be commissioned in September of this year. The authorization for these ships began in 1978, and with your continued support will extend through 1990, for a total of 27.

However, our R&D commitment to the Aegis program is far from complete. We have just completed the operational evaluation of the SPY-1B radar, which is the second generation Aegis radar. As a matter of fact, that radar has now just gone into full production.

What I would like to point out is the increase in capability that we have achieved in the Bravo version of the Aegis radar. I would like you to realize that this is a representation of radar range. Along the bottom, radar range in nautical miles versus altitude. It gives an idea of the spherical volume that the radar is able to search [deleted].

The SPY-1A, which is onboard the *Ticonderoga* and the first four ships of the class, in general was able to achieve detections out to about [deleted] in what we consider to be a [deleted].

The SPY-1B version of that radar achieved approximately a [deleted] in detection range. Those ranges are very credible [deleted]. But most importantly, they provide us with the reaction time that we need in order to counter a very fast missile that is inbound.

Admiral BACIOCCO. Let me point out that what is shown on the graph is detection. Remember that the SPY [deleted]. Looking at the SPY-1B/D, the B version will go on the CG-52 and follow-on and the D version will go on the DDG-51. It is really a very nice piece of equipment. As the captain said, [deleted].

VERTICAL LAUNCHING SYSTEM (VLS)

MISSION

- Provide rapid reaction, high rate of fire, multi-mission launching system.
- Launches Anti-Air, Anti-Surface, and Anti-Submarine Missiles from surface ships.

SHIPS	CAPACITY	WEAPON
CG-52 (22 SHIPS)	deleted	deleted
DDG-51 (29 SHIPS)		
DD-963 (24 SHIPS)		

Captain MAIXNER. *Bunker Hill*, the first ship to get the SPY-1B, will also incorporate the vertical launch system. The VLS is a multiple-purpose launching system which allows rapid, [deleted] launching of cruise and surface-to-air missiles, [deleted].

The VLS replaces the slower electrohydraulic missile launching systems. The flexibility and quick reaction time that we have gained provides the needed firepower to enable the Aegis system to engage even the most pressing threat regimes.

Further, VLS is more economical in terms of space and volume. This permits a greater missile loadout. For example, *Bunker Hill* and follow-on Aegis ships will carry [deleted] missiles, as compared to the [deleted] carried by the earlier Aegis ships. The importance of this increased loadout can be fully appreciated in light of the fact that Aegis can [deleted].

This marriage of VLS and the Aegis system yields an extraordinary increase in firepower.

GUIDED MISSILE DESTROYER - DDG 51

Mission:

To destroy enemy aircraft, missiles, submarines and surface ships.

FY 1987 REQUEST:

$99.6M

CHARACTERISTICS

			OFFICER	ENLISTED
		MANNING:	23	280
LENGTH:	466 FT	BEAM:	59FT	
NAV DRAFT:	30 FT	DISPLACEMENT:	< 8300TONS	
PROPULSION:	LM 2500 Gas Turbine	SPEED:	30 KTS	

WEAPONS: AEGIS Weapon System, Vertical Launch System, TOMAHAWK, SM-2 MR, VLA, HARPOON, Torpedoes, (1) 5"/54 gun, SQS/53C SONAR, AN/SQR 19 TACTAS, CIWS (2), SLQ 32 (V) 2/SUPER RBOC, LAMPS MKIII ELECTRONICS

Work is progressing on schedule with *Arleigh Burke*, the first of the Navy's new class of Aegis destroyers. With its Aegis weapons system and VLS systems, *Arleigh Burke* provides more multimission firepower than the earlier DDG-2 and 37 classes that it replaces.

These most capable and survivable destroyers borrow heavily from the already proven *Spruance* and *Ticonderoga* designs, and the *Burke* class will also include a SPY-1D version of the SPY-1B radar. It is qualitatively the same as the 1B. It has simply been scaled down for the smaller platform that it will be on.

The inherited producibility that we have in these ships from strict design controls have prevented unwarranted cost growth and unnecessary complexity. Last year, this committee authorized *Arleigh Burke*, and that warship is on schedule. Contract award occurred in May of 1985 and construction will begin in May of next year. We expect delivery of *Arleigh Burke* in October 1989.

Mr. BATEMAN. If I understood you correctly, the SPY-1D will have essentially the same capabilities as the SPY-1B. Why have both, if the only difference is size?

Admiral BACIOCCO. Yes, they have essentially the same capabilities sir. The difference between the two are the antennas, you don't use as many antennas. It is the same radar, really. You also don't have two transmitters on the D version. It is basically the same thing. The designator simply indicates that the B fits the footprint on the CG-47 class, the D fits the footprint on the DDG-51 class.

Mr. BATEMAN. Wouldn't the smaller one fit equally well——

Admiral BACIOCCO. You would need one more antenna. The arrangement of the ship drives the number of antennas and the number of transmitters. Since we started, the first generation, the B is an outgrowth of the A, which is the same ship hull; the CG-47.

Mr. BATEMAN. So there are reasons why there must be two models, even though one has the same capabilities as the other?

Admiral BACIOCCO. Yes, sir. And you can use the transmitter and the 400 Hz converter. Furthermore, the signal processing for the B and the D are identical. You can take one equipment and it will go to a D, and another and it will go to a B.

Mr. BATEMAN. A sailor who can operate one can operate the other?

Admiral BACIOCCO. Yes, sir. Absolutely.

Mr. BATEMAN. Without any significant cross-training?

Admiral BACIOCCO. The exact same training. The things that are different between the A and the D from an operating point of view are transparent to the operator. From a maintenance point of view, there are a couple more boxes. They are generally redundant features, rather than different features.

NEW THREAT UPGRADE (NTU)

MISSION

Provide improved target engagement capability for Terrier and Tartar Cruisers.

FY 1987 REQUEST:
$50.9M

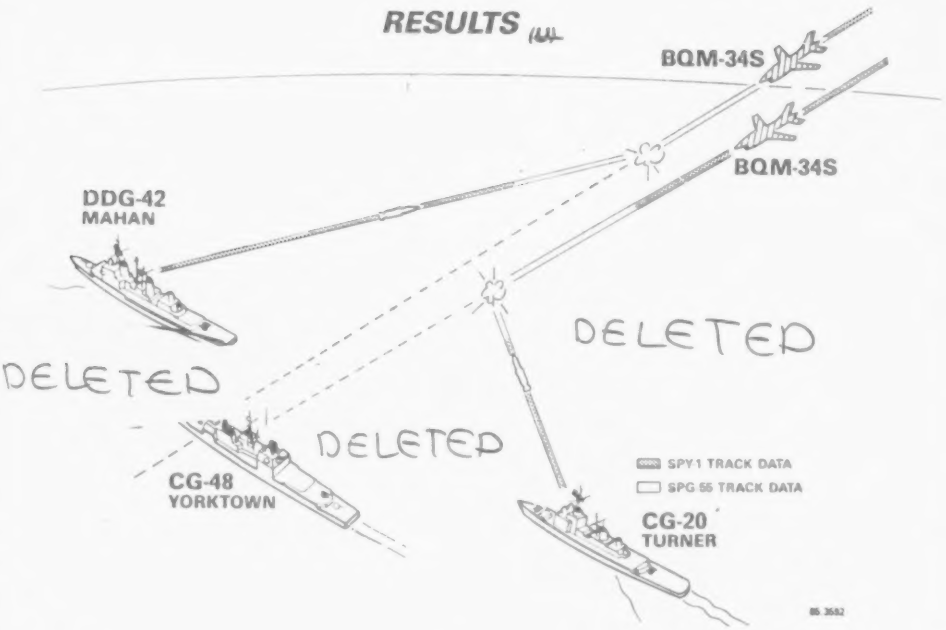
NTU CHARACTERISTICS

RADAR
DETECTION RANGE (NM)
CLEAR
JAMMING
REACTION TIME (SEC)
(DETECTION TO FIRE)

DELETED

Captain MAIXNER. Our older classes of missile ships are not, however, completely being overshadowed by the spectacular warfighting capabilities of the Aegis ships. The New Threat Upgrading Program is backfitting the latest [deleted]. This will enable these ships to engage [deleted]. This is a substantial increase in capability.

This past year, the Navy made significant progress toward achieving the capability for [deleted]. In remote-track launch-on-search, Aegis ships can [deleted].



I would like to take this opportunity to talk about this slide for a moment. *Yorktown* is the second of the Aegis cruisers. In this particular test that we conducted in summer of last year, the *Yorktown* was [deleted] which is [deleted] as we have seen in that previous slide.

The *Mahan* and the *Richmond K. Turner,* for the purposes of this test, [deleted], in other words, they had [deleted]. The *Yorktown* was able to track both inbound BQM-34 drones [deleted].

Mahan was able to engage with an SM-2 standard missile the first drone. She engaged initially at [deleted] and executed the missile launch at [deleted]. At a range of [deleted], the missile [deleted] achieved an intercept at [deleted].

Now in both these cases, we were firing telemetry standard missile birds, with no warhead on our missile. [Deleted].

Mr. Hunter. How fast were the drones coming?

Captain Maixner. [Deleted.]

Mr. Hunter. Was it known that they would come in in a certain envelope?

Captain Maixner. Yes, sir. This was our first operational test of this particular remote-track launch-on-search capability, and to some degree, yes, it was a canned exercise.

Admiral Baciocco. We just last week had another exercise where we tried a variation on this. We made some [deleted] modifications to the system on the Aegis cruiser, and on an E-2, early warning aircraft. We put an NTU ship [deleted] and we [deleted].

A target drone came in; he detected [deleted].

Mr. Cavaiola. Both of these shots were made off your [deleted] though, right?

Admiral Baciocco. Yes, that is correct. As was the one I just described.

Captain **Maixner**. The net effect of this is that the Aegis weapons system is [deleted].

Admiral **Baciocco**. The other significant thing—go back to that slide—is that the attacking forces are [deleted] the Aegis. I mean they are going to do everything they can to [deleted] the Aegis.

[Deleted.] It is a very powerful warfighting tool that we have with the Aegis ship that goes far beyond the lifelines of that ship itself.

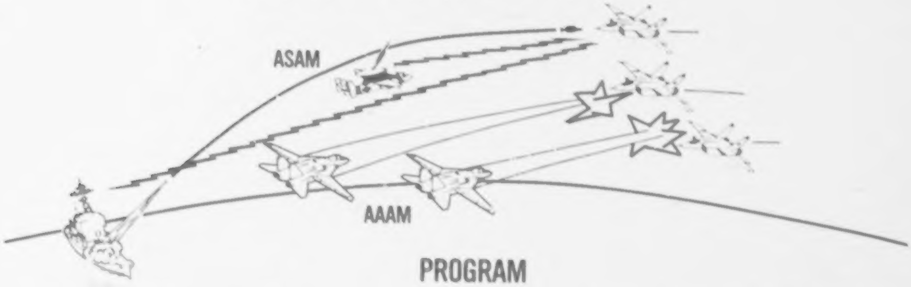
Captain **Maixner**. The basic underlying thrust of our AAW program is pointed toward a concept which we refer to as the Outer Air Battle. The Aegis and NTU systems provide a very credible intercept capability [deleted]. This coupled with our point and local defense systems gives us a layered defense. However, since the advent of the Backfire bomber and improved Soviet missiles, antiship cruise missile launch can occur [deleted].

Navy studies indicate that there is high payoff in [deleted]. Similarly, there is a advantage in engaging the [deleted].

ADVANCED AIR-TO-AIR MISSILE/ADVANCED SURFACE-TO-AIR MISSILE (AAAM/ASAM)

MISSION

PROVIDE INCREASE FIREPOWER IN OUTER AIR BATTLE



PROGRAM

INCREASE FIREPOWER IN OAB

- KILL BOMBERS deleted
- KILL AIRCRAFT deleted
- deleted

FY 1987 REQUEST: $79.7M

PROJECT ELEMENT 63318N ADVANCED SAM/AAM

- PROJECT S1632 ASAM CONCEPT FORMULATION
- PROJECT W1671 AAAM CONCEPT FORMULATION
- PROJECT S1912 SAM RISK CLOSURE
- PROJECT S1913 ADVANCED AAW SYSTEM

As we indicated in our briefing last year, the Navy and industry have continued the concept formulation for an advanced antiair warfare system. This system, also referred to as AAAM/ASAM will extend the reach of our AAW systems to counter Soviet bombers [deleted].

The goal is to complete concept formulation which commenced in February 1984 and reach a decision on program direction this summer. We are working to ensure an early [deleted] of a missile capable of countering the projected [deleted] threat.

Under AAAM/ASAM we have been developing the guidance and propulsion technology required to [deleted].

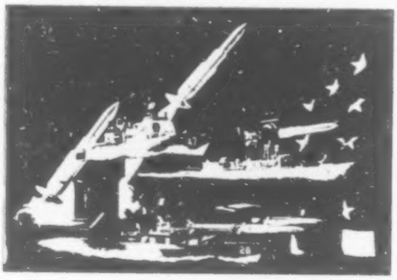
STANDARD MISSILE

MISSION

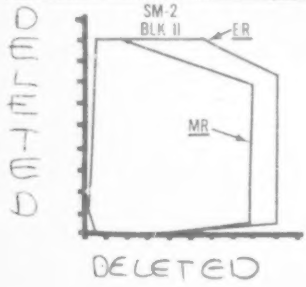
To destroy enemy Aircraft and Anti-Ship Missiles

FY 1987 REQUEST:

$46.0M



STANDARD MISSILE ENVELOPES



- PLANNED IMPROVEMENTS
  - DELETED
  - DELETED
  - DELETED

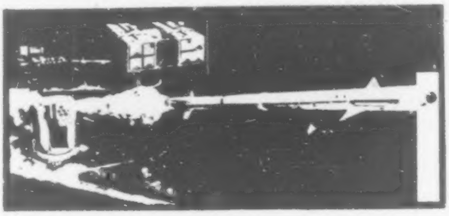
Within the Standard Missile Improvement Program, [deleted] improvements are being realized which will increase the kill probability. This will maximize the lethality of the Standard missile [deleted].

ROLLING AIRFRAME MISSILE (RAM)

MISSION

To provide rapid reaction, DELETED against Anti-Ship Missiles

FY 1987 REQUEST:
$24.2M



CHARACTERISTICS

MAXIMUM RANGE (YDS)
MINIMUM RANGE (YDS)
MINIMUM ALT. (FT)
GUIDANCE
LAUNCHER CAPACITY (RDS)
STAND ALONE EX-31
NATO SEASPARROW MOD

DELETED

The Navy has also continued to forge ahead in addressing deficiencies in its antiship missile point defense systems. The Rolling Airframe Missile, or RAM, program is benefitting from a stringent engineering reliability review program which was initiated early last year. We stoppped testing on this system [deleted]. Recent successes, however, indicate that we have made significant progress and anticipate resuming full developmental [deleted].

Mr. HUNTER. You are familiar with the BPDMS issue. The Congress put a hold on jerking the BPDMS, the Basic Point Defense System, off of the "L" class ships, which the Navy was going ahead with [deleted]. Nothing. And we put a hold on the thing contingent on having a report from the Navy on why the hell they are doing it.

The report, or the review that Bob and Larry and I got back was, although it has limited value, it is all we got. And there is no use taking the soldier's M-14 away on the basis that he is going to get an M-16 sometime in the future [deleted].

They are going ahead with the—as I understand, they are not going to pull it off the LCC's and what? The LPD's?

Mr. SCHAFER. Basically, they are going to keep it [deleted].

Mr. HUNTER. [Deleted]. And we had a discrepancy as to whether or not they were jerking it off of that. The input we had was that they were going ahead with it, and since they were close to doing it, they wanted to do it anyway, which didn't make a lot of logic to me. If it is not a good move, I don't know why you have to do it because you have got it in the plan.

But I guess the question I would have on the thing is they talked about having this thing [deleted] at some point in the future, and I would hope that the Navy wasn't pulling these babies off so that they could come back next year all out of breath and say, "By God, we got to have a system. We don't have one because we took them off of our ships. We took off the old, the M-14, so now we got to have an M-16."

What was the reason why you wanted to jerk those things off?

Admiral BACIOCCO. I have got to admit, Mr. Hunter, that all too often R&D is accused of not being ready when things come off. But I don't track what comes off and I don't know. I could find out. I am really not familiar with the logic of that decision. That logic is something that is developed under the DNCO, Surface Warfare, with this Fleet Modernization Program.

I certainly agree with you that a rifle in the hand is a lot better than the promise of one in the magazine when you go to visit the magazine.

Mr. HUNTER. When is RAM going to come on?

Admiral BACIOCCO. RAM is going to come on [deleted]——

Mr. HUNTER. No; I mean when are they going to have RAM ready for us to——

Admiral BACIOCCO. To actually pull off the Basic Point Defense System, from a practical point of view I would guess, in numbers, [deleted]. By that time, you will have the launcher, the EX-31 launcher, and the missile in numbers.

Mr. HUNTER. So it really doesn't make any sense to take the soldier's M-14 away if he won't get the M-16 until [deleted].

Admiral BACIOCCO. As a matter of principle, I would agree with that; yes, sir.

Mr. BATEMAN. You will let us know that that is not happening, I trust?

Admiral BACIOCCO. I will be glad to let you know. I will check on that.

Mr. HUNTER. Mr. Chairman, if I could just pursue it for 1 second, then.

Mr. SISISKY. One second.

Mr. HUNTER. If they are taking these things off, I realize that a contractor has got a contract [deleted] as I understand. Although I understand an order went down from Admiral Metcalf to hold on until they gave us the report pursuant to the law, the boys at Long Beach called up and [deleted].

If it is the M-14 and you are not going to have an M-16 for those [deleted], does it make sense even to [deleted]. God Bless them?

Admiral BACIOCCO. In principle, I would say no, it doesn't. But I will go pull that string.

Mr. HUNTER. Could you work with Bob and Larry on that?

Admiral BACIOCCO. Yes, sir.

Mr. HUNTER. They are pretty involved in that.

Admiral BACIOCCO. Yes, sir, be happy to.

Mr. HUNTER. Thank you, Mr. Chairman.

Mr. SISISKY. Thank you, Mr. Hunter.

Continue, please.

Mr. MAIXNER. As you know, RAM is being developed jointly with Germany and Denmark and it will provide naval forces with the high firepower, low cost, self-defense missile system capable of dealing with the [deleted]. RAM incorporates technologies developed in other missile systems. It initially [deleted].

We expect RAM to enter into limited production in fiscal year [deleted].

Particularly significant in the self-defense arena——

Mr. SISISKY. Is the RAM still relatively cheap or do we know any costs yet?

Admiral BACIOCCO. Yes, sir. As a matter of fact, we took a very close look at that because some people had questioned the cost of the RAM saying that it really ought not be much more than a 5-inch round since it is a 5-inch missile or it shouldn't be much more than Stinger because it uses part of that. As a matter of fact, we did a very objective analysis and it is cheaper than Sparrow, it is more than Sidewinder. And there are some pretty good reasons why that is the case.

We see it being about $100,000, $113,000—a little over $100,000 per missile. It depends so much on the number that you are going to buy.

Mr. SISISKY. A little more than a 5-inch round?

Admiral BACIOCCO. Yes, sir, a little more than a 5-inch round, maybe about twice as much as a 5-inch round.

Mr. SCHAFER. Even a laser guided 5-inch round.

Admiral BACIOCCO. It is more than that.

CLOSE IN WEAPONS SYSTEM (PHALANX)

MISSION

To provide fully automatic, rapid reaction terminal defense against Anti-Ship Missiles.

FY 1987 REQUEST:
$7.5M

CHARACTERISTICS

	BLOCK 0	BLOCK 1
ENGAGEMENT RANGE (YDS)	DELETED	DELETED
AUTOMATIC SEARCH ELEV (°)		
RATE OF FIRE (RDS/MIN)		
MAGAZINE CAPACITY (RDS)		

Captain MAIXNER. Particularly significant in the self-defense arena has been the block improvement to the Phalanx close-in weapon system. In addition to reliability and maintainability improvements, the new Phalanx has recently demonstrated a significant expanded engagement envelope.

In live fire operational testing at sea last summer, Phalanx [deleted].

Block I incorporates an expanded [deleted]. An increase in the rate of fire from [deleted] and an increased magazine capacity of 1,589 rounds.

Block I has just transitioned into limited production. The expanded operational capabilities and solid-state reliability improvements of block I will be retrofitted to all earlier block O systems.

Mr. SISISKY. Do you think you have all the problems solved on that, like saltwater?

Admiral BACIOCCO. Yes, sir. The history of CIWS, if one goes back to the way it was developed, tested, and then put on ships in numbers, left a number of gaps. We have done some very stringent testing, some very high-level attention type of work to develop the realiability ORDALTS that are now being put on the block O; and, of course, all of that has been folded into the block I.

We feel availability is up in the fleet. All the problems aren't gone, but the availability, in general, is up in the fleet. Where a problem pops up, it is chased down, and slowly but surely they are all being put to bed.

Mr. BATEMAN. These go on the Aegis cruiser?

Admiral BACIOCCO. These go on almost everything, sir.

Mr. BATEMAN. Everything.

Admiral BACIOCCO. Almost everything, yes, sir. It is a close-in defense system.

Mr. BATEMAN. General utilization?

Admiral BACIOCCO. Yes, sir. Also, the British have it, the Japanese have it, several other of our allies have it. It is a good system.

Mr. HUNTER. Can it handle the [deleted].

Admiral BACIOCCO. Our system can handle [deleted]. This is the close-in portion of the layered defense system. There are medium range portions of the system. There is the long range portion of the system, starting right out with the CAP on station, the SM-2s, ERs, the RAMs, the Sea Sparrow, and then this.

Mr. HUNTER. A lot of stuff is going to get through the first phases. Can it shoot a lot of incoming missiles [deleted].

Admiral BACIOCCO. That is a tough question because the [deleted]. It is you know, [deleted]. So if you ended up with one of these on a ship and [deleted].

Mr. HUNTER. We are putting enough of them on our ships, then, the CIWSs?

Admiral BACIOCCO. Yes, sir, I think so. And mixed with the other weapons systems, [deleted] that we have, yes, sir.

Mr. SCHAFER. Let me just follow up. I think very specifically as I understand one of the defeat mechanisms of this though is [deleted] the system will [deleted].

Admiral BACIOCCO. We found that as a matter of fact in the very extensive testing we did last year. Where if you had [deleted]. That has been fixed and it has been tested.

We have really gone after this. It is going to be hard to get [deleted]. It really is, sir. That would happen more by luck than design.

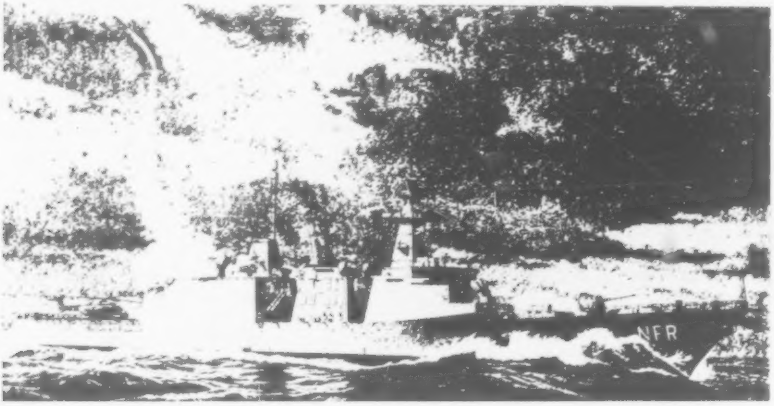
We feel very good about this.

Mr. **Bateman**. Who is talking whose design?

Admiral **Baciocco**. If you tried to do it, it wouldn't happen, is what I meant to say.

NUNN AMENDMENT

(NATO COOPERATIVE PROGRAMS)



- NATO FRIGATE REPLACEMENT 1990's
- NATO FRIGATE AAW SYSTEM
- SURFACE SHIP TORPEDO DEFENSE
- NEW GENERATION MINE
- LINK 11 IMPROVEMENT
- MARK XV IFF
- NATO SEASPARROW IMPROVEMENTS

Captain **Maixner**. As I indicated earlier in the new generation mine discussion, congressional emphasis through Nunn amendment funds on NATO-cooperative development programs, provides an opportunity to reduce costs and improve NATO conventional defense. The Navy welcomes this initiative and identified an initial set of seven programs that have potential for joint development to increase United States and allied capabilities. These are listed on the Vu-Graph.

We have already discussed the new generation mine. It will probably be the first program for which we will be able to sign a memorandum of understanding.

The NATO frigate replacement for the 1990's or NFR–90, is a collaborative effort with seven other NATO nations to design a frigate for the [deleted]. It is not a commitment to build ships, but rather an opportunity to develop systems that meet United States as well as NATO needs.

Admiral **Baciocco**. I think, if I may, Mr. Chairman, without going through each one of these programs, to say from our perspective the action by the Armed Services Committees and the Appropriations Committees in support of the Nunn amendment has been a good one and we welcome it. Really, this will help us overall. It is going to solve interoperability problems. It is also going to give us some systems at a lower cost. The Navy embraces it.

Captain **Maixner**. Mr. Chairman, at this time I would like to shift over to a discussion on ship survivability.

Ship survivability has been a subject of longstanding interest to this committee. A thorough review of fleet survivability was conducted in 1977, which resulted in Public Law 95-194. This bill provided the impetus necessary to bring ship survivability to the top of the Navy's priority list.

It is a program in which the CNO plays a personal role and which continues to have his close personal interest and support.

SURVIVABILITY

- PASSIVE PROTECTION SYSTEMS
- CBR ENVIRONMENT
- INSENSITIVE MUNITIONS
- DESIGN TESTING

Ship survivability policies and efforts have been directed toward the concept of ensuring the ability of our ships to absorb a reasonable amount of damage and still remain performance capable. Upgrades are being implemented onto our existing battle group and amphibious ships and are being incorporated into the design specifications of all new construction ships.

Current R&D work is directed toward improving personnel protection and controlling damage, especially firefighting and containment, and in enhancing survivability in chemical, biological, and radiological environments.

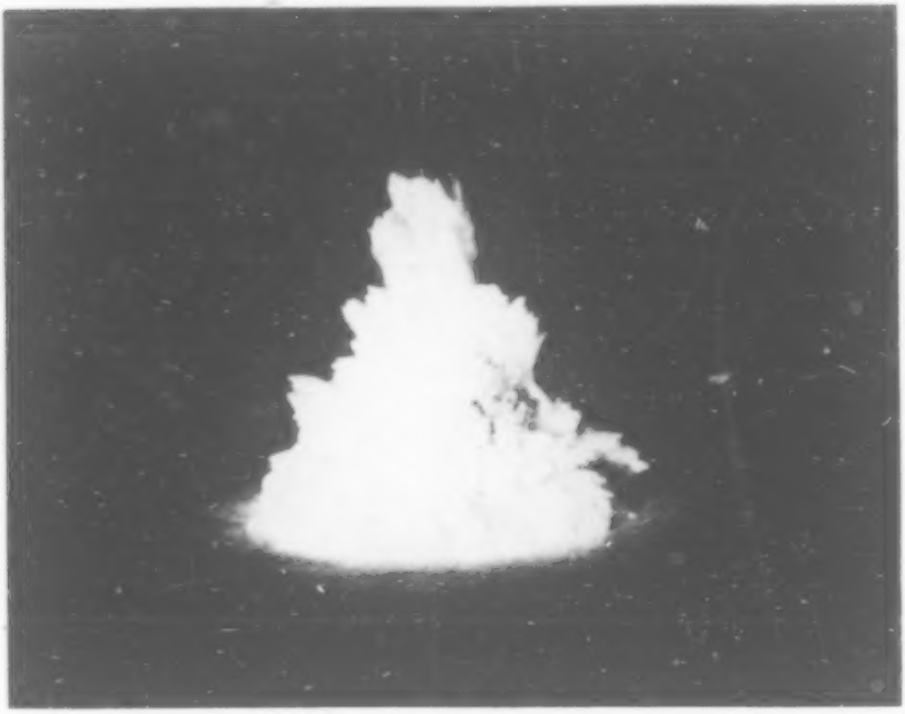
In determining our program structure we continue to include the lessons learned from World War I battle damage reports. We view the kamikaze as the precursor to the antiship cruise missile. In the same vein, the lessons of the Vietnam era are reflected in the foam firefighting systems now installed in all Navy ships and in the hanger bay compartmentation now standard in all of our aircraft carriers.

Similarly, fleet accident reports, extensive computer simulations, firing exercises against our own hulks, and Falklands battle damage experience are analyzed in detail to provide additional direction to our efforts.

Programs also include measures to reduce the vulnerability of magazines and combat systems by the use of Kevlar armor and other techniques around vital spaces and through cabling and waveguide armor.

In addition, the Navy is the lead service in developing munitions which are safer. Our goal is to achieve complete transition to insensitive munitions by 1995. The purpose of this program is to minimize the reaction and collateral damage caused by munitions that are subjected to accidental shock and heat.

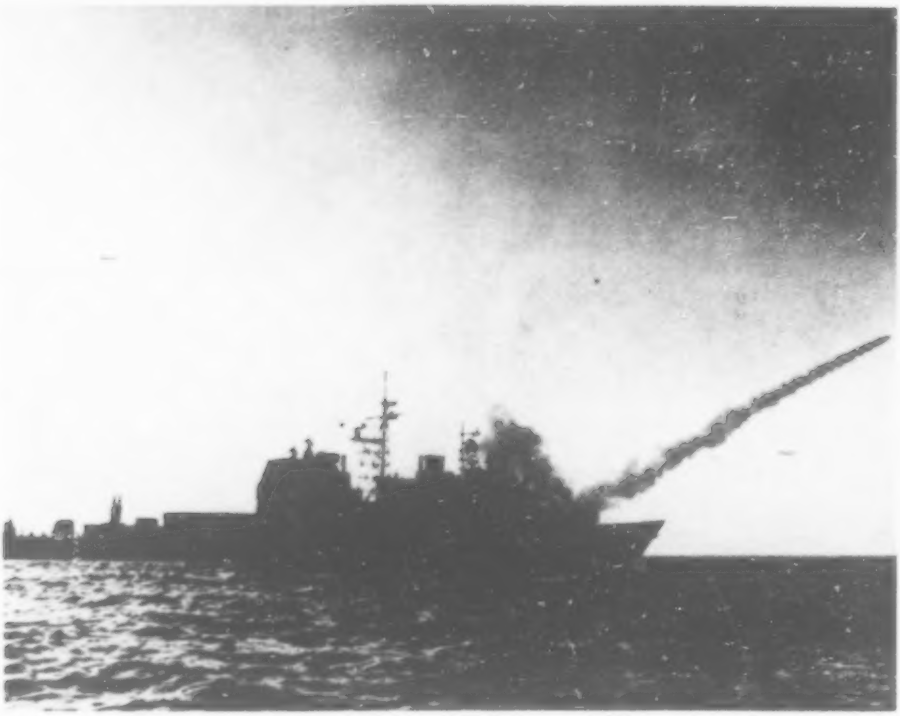
Although peacetime munitions accident rates do not indicate a problem, the technology is available to render munitions safer in a combat environment. The need for this is attested to by the *Forrestal* and *Constellation* combat-induced accidents during the Vietnam conflict, and by our own World War II experience.



Shock tests are performed on a lead ship of all surface combatant classes. This identifies those equipments with inadequate shock-resistant installation, and deficiencies are corrected throughout the class during postshakedown availability or earlier.

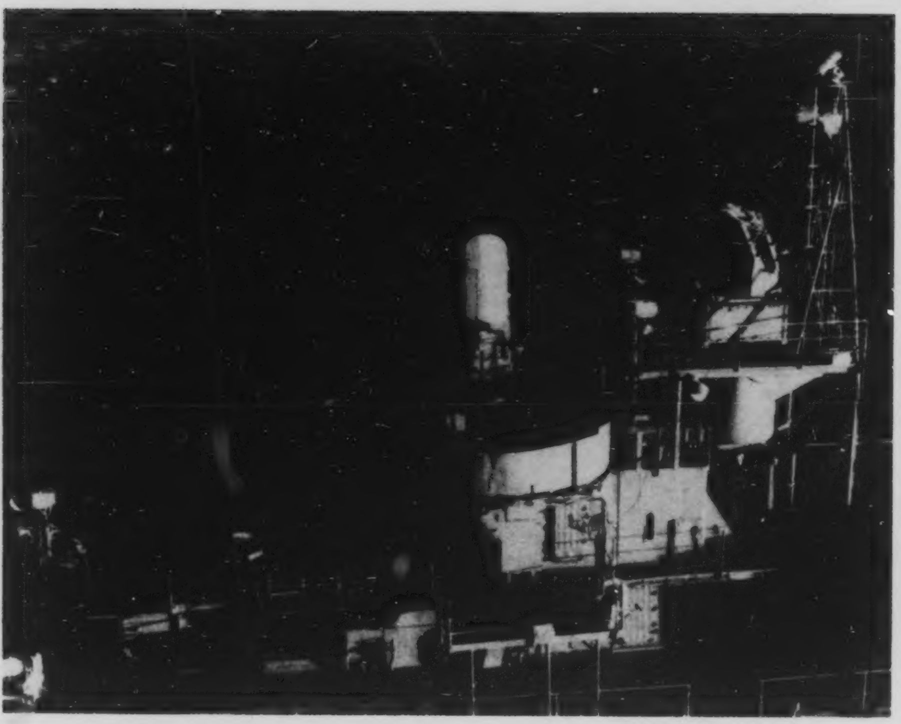
This Vu-Graph shows U.S.S. *Kidd*—DDG-933. You can see the outline of the ships and the sunlight cn her bow right here. This particular explosion was [deleted] exploded [deleted] away from the ship. The charge was suspended at a depth of [deleted].

U.S.S. *Kidd* was underway under her own power after this test.

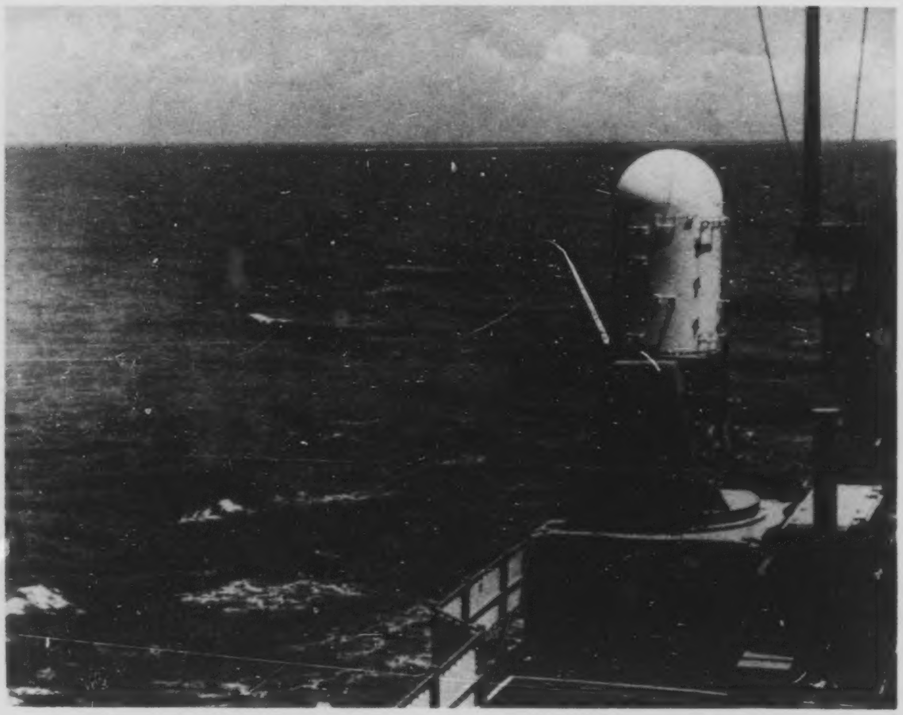


During operational test and evaluation live fire tests are conducted to evaluate system performance. As you recall, last year we briefed you on the extensive *Ticonderoga* live firing exercises. This is a good example of the full-scale, operationally realistic scenarios employed in Navy test and evaluation.

To add a dimension to the operational realism of testing, the Navy has taken a decommissioned destroyer, the ex-*Stoddard,* and equipped her with remote control so that the Phalanx Point defense system can be tested in the most realistic manner possible.



This Vu-Graph shows the ex-*Stoddard* underway with the Phalanx installed during testing.



So far ex-*Stoddard* has survived [deleted] missile shots, many of them with fully functional live warheads.

NAVY RDT&E OPERATIONAL TEST AND EVALUATION

- COMOPTEVFOR TESTS ALL NEW SYSTEMS
- 900 OPERATIONAL TESTS CONDUCTED IN PAST TWO YEARS
- LESSONS LEARNED ARE APPLIED TO R&D

We would like to conclude our briefing today with a look at how the Navy proves out new systems and equipment. The Commander, Operational Test and Evaluation Force, whom we refer to as Comoptevfor, is the Navy's independent test and evaluation agency. Comoptevfor is set aside from the normal chain of command and reports directly to the Secretary of the Navy and the CNO. He briefs the results of tests and all production decision reviews, and his concurrence is needed before such a decision is made.

We are particularly pleased by the manner in which Comoptevfor carries out the test and evaluation portion of our RDT&E efforts. During the past 3 years Comoptevfor has published 212 operational test and evaluation project reports, along with 55 interim, or "quick look," reports.

Comoptevfor also produces operational tactics guides for systems completing test and evaluation. Comoptevfor, to the greatest extent possible, gives each new or improved system a comprehensive series of tests in a realistic operational environment. This stresses the system to the prescribed limits in effectiveness, maintainability and suitability. Comoptevfor has conducted 900 such tests over the past 2 years.

During the past 3 years Comoptevfor has recommended fleet introduction of [deleted] percent of the systems completing test and evaluation. He has recommended against [deleted] percent, stating what improvements were necessary if the systems were to be acceptable. In 15 percent of the cases Comoptevfor determined that additional test and evaluation was necessary before he could make a milestone recommendation.

Comoptevfor works in conjunction with development agencies and with the CNO's staff in determining test requirements. Yet, his independence is secure; he alone develops the test plan, supervises the tests, and analyzes the results. This has over the years led to a healthy and constructive relationship and ensures systems are properly designed, constructed and operationally effective before we invest heavily in their procurement.

Admiral BACIOCCO. I might add, sir, that while he participates with the development agency in determining test requirements, when he tests he throws everything he can at the system, far beyond the thresholds which are prescribed as requirements by the CNO. He has more [deleted] for instance, to put against the Aegis cruiser than we think the Soviets will have in the next [deleted] and he tests it. When he goes against an Aegis cruiser he will fly with that [deleted]. It is a very, very tough test.

Mr. HUNTER. Do you think the Aegis tests, the most recent ones, were the toughest they could possibly be?

Admiral BACIOCCO. The most recent ones, sir, last April?

Mr. HUNTER. Do you remember the ones we had a problem with?

Admiral BACIOCCO. Yes, sir, I do.

Mr. HUNTER. The Navy said don't worry, the next ones will be successful, and, by God, they were.

Admiral BACIOCCO. Right.

Mr. HUNTER. They all hit the targets. I just would ask you do you think those were the toughest they could——

Admiral BACIOCCO. Absolutely. Oh, yes, sir.

Mr. HUNTER. And did they in any case approximate a [deleted].

Admiral BACIOCCO. As far as the amount of [deleted] that you would have——

Mr. HUNTER. No. I mean a [deleted] which is what we think [deleted].

Admiral BACIOCCO. I would say that the capability to handle [deleted] has been demonstrated clearly by Aegis. It was demonstrated in the test beforehand, albeit with aircraft. We can only [deleted].

Mr. HUNTER. I understand that.

Admiral BACIOCCO. The tests last April that we did on her way back from the Med—were they as stressing as we could possibly make them in a testing environment? Absolutely. I would hold it up before anybody.

Mr. HUNTER. OK. But were there a lot of missiles involved?

Admiral BACIOCCO. Yes, sir, but [deleted]. They were [deleted] engagements that took place. [Deleted.]

Mr. HUNTER. Have you thought about [deleted] at this system?

Admiral BACIOCCO. Yes, sir. But we think we have done everything we have to to demonstrate that it will do it.

Mr. HUNTER. The best way to do it is to do it.

Admiral BACIOCCO. I know that. But, you know, we have handled [deleted] aircraft in a raid against her. It is a matter of resources. That test last April cost us $30 million.

Mr. HUNTER. I understand that. I understand that you can't get [deleted] independent tests if you threw everything at once. But I think at some point you may have to [deleted] and see what you can do with it.

Admiral BACIOCCO. Yes, sir. And I think——

Mr. HUNTER. Because that is what the other guy is going to do.

Admiral BACIOCCO. I believe we have done the equivalent of that, if not that, within the constraints of what we can do on a range.

Mr. SISISKY. Admiral, have you finished your presentation?

Admiral BACIOCCO. Yes, sir, we have just completed. That was the last subject we had.

Mr. SISISKY. Then we will go to questions.

Mr. Bateman.

Mr. BATEMEN. Yes. This test and evaluation organization, it has done *x* hundreds of tests. What do they find as the area of greatest concern? What system?

Admiral BACIOCCO. Their missions to test a system. They find what is wrong. An area of greatest concern, I think it is not possible to come up with a single area of greatest concern in the effectiveness of any particular system because the systems vary so greatly. What is the case on an airplane would be different on a ship than it would be on a torpedo.

The common thread, where they put a significant amount of attention, and which we are able to feed back in as a finding, if you will, that is applicable to more than a single system is in the area of reliability and maintainability. The suitability of the system. He evaluates effectiveness, that says how well it does it shoot something down or sink something, and suitability, how does it operate, how well can it be maintained on a day-to-day basis in a naval environment so its readiness is up all the time. We learn a lot from that.

He is a very, very thorough person. He is absolutely independent, to the point of distraction at some times.

Mr. SISISKY. Who is that? Admiral Carter?

Admiral BACIOCCO. No. Admiral Carter has retired and now it is Adm. Ted Parker, who was my former deputy.

It is a good organization.

Mr. Bateman. In none of the tests, or none of the systems is there a system that did not test out well?

Admiral Baciocco. Oh, yes, sir.

Mr. Bateman. Well, that is basically what I am asking.

Admiral Baciocco. I am sorry.

Mr. Bateman. Which systems are giving us trouble based upon testing, though?

Admiral Baciocco. We don't produce that system until we have fixed the problem or problems that he cites and he has retested it and satisfied himself that those problems have in fact been fixed. [Deleted] of those that he has tested over the past 3 years have been turned back because he said they are not ready, don't produce them, don't introduce them. And we go and take the time and spend the money and fix those deficiencies.

He also, when he tests, comes up with recommendations to make things better. That is, he says it is all right to go ahead and deploy this, it will do its job but there are some things you ought to fix. I, personally, from my office track that back and force the sponsor to make a decision on that and clear the books. In other words, either fix those things or come back and in a proper forum say this is not worth the money to fix, or I am not going to fix it for whatever reason.

Mr. Bateman. Then we have nothing in production for which the test results were not satisfactory?

Admiral Baciocco. We have nothing in production that Comopteofor has said don't put it into production. He may say "go to production, but put these fixes in during production, and I want to test the first production model that comes off the line."

Mr. Bateman. What is the track record as to things he says, or they say go ahead and produce this but with these modifications as to whether or not the modifications that were then tested worked?

Admiral Baciocco. Very good I think. Very good. He will tell us what doesn't work and it is up to the developing agency to figure out what has to be done to the system to make it work, and then he tests it again. And once again we don't know how he is going to test it. He will write his own test plans.

The CNO's job is to determine the threshold, that is, I want its reliability to be [deleted] or it must have a probability of kill of [deleted] in a certain amount [deleted]. He will go test it in his own way.

Mr. Bateman. Thank you, Admiral.

Admiral Baciocco. Yes, sir.

Mr. Sisisky. Mr. Hunter, did you have any questions?

Mr. Hunter. No, I am fine. Thank you, Mr. Chairman.

Mr. Schafer. Admiral, the concern about testing has taken a new turn in the case of the Bradley fighting vehicle for the Army, where people are insisting on live-fire testing in all aspects. It is at least conceivable to me that people who start thinking about Army combat vehicles might turn to ships at some point and say, well, you know, what kind of results do you have from your testing to demonstrate that, in fact, ships do it.

I guess I was struck in listening to the testimony that we talk about testing the performance of our systems, but aside from the one picture you talked about of a shock test, an explosion some [deleted] from a ship, that you didn't talk about any testing of actual damage inflicted on a ship or simulated on ship structures.

I have heard, and, in fact, I think we are still building the CG-47 with basically one large computer system [deleted] and if a hit somehow could be sustained in that area, it would basically knock the combat system of the ship out as I understand it.

What kind of testing do we do to demonstrate the ability of ships to survive damage if inflicted? And how are we incorporating into the design the ability to take damage and keep fighting?

Admiral BACIOCCO. A long bit of experience that the Navy has dating back as far as the Navy goes back, on damage and damage control. There was a time in our shipbuilding program where we forgot about steel and we forgot about all the lessons of damage control that we might have or—other navies did, too. Witness the *Sheffield*. We saw warfare changing. One needs to be reminded from time to time that warfare is still taking hits and people are getting killed and some ships are sinking. We have I will say rediscovered that.

We have had a great amount of debate on it. Of course we have discussed with the Congress and had things properly pointed out to ourselves.

We have made a major investment in what we are doing. We talked about some of the survivability efforts we are doing. We have got a hundred million dollars in research and development in fiscal year 1987 requested to handle insensitive munitions, better damage control, citadel protection on our ships—those things that you have to do to make the ship survive once hit or once put into a bad or a threatening environment, whether it be a chemical-biological environment or a shock environment.

We have, I believe, looked at and utilized Kevlar armor more and more. We have gone back with the DDG-51 and put in redundant systems. We have put steel back into ships. We have made that probably the toughest ship that we have built in a long period of time, and a lot of thought went into that.

Now, does that mean to prove it we really ought to go out and shoot at the DDG-51? My answer would be no because they come very dearly, and I don't think anyone would disagree. But have we done things to give us confidence that we know that the computer system is in a safe place given the total safety of the ship. Remembering that it is not a battleship, it is a destroyer. Yes, the design has done that.

Do we know how the steel on that ship will survive if someone does shoot a round at it or to shrapnel of a nearby near hit? Yes. I think we can go back and find the data in our laboratories at Dahlgren or wherever where we have shot against that type of steel and we know its qualities to the point that we can engineer it pretty well, and given the arrangements we have, given the thickness of the steel we use, you can pretty well predict what damage a round coming into that ship will do.

Mr. HUNTER. Let me follow up on Bob's question just 1 second.

Admiral BACIOCCO. Yes, sir.

Mr. HUNTER. I think basically the life of the ship is based on that capability to detect incoming missiles and destroy them, and it would make sense that the last thing that should go out on that ship is the system that is capable of picking up the incomings.

Admiral BACIOCCO. Absolutely.

Mr. HUNTER. Is it that heavily protected?

Admiral BACIOCCO. In that context, Mr. Hunter, I would say yes, given the firepower of the ship. I mean, part of ship survivability has to be its weapons systems.

Mr. SISISKY. You know, I went East, to Korea and to Clark Air Force Base, a couple of weeks ago. And in both places—and it just dawned on me right now—I asked the Air Force what kind of air defense do you have? None. No air defense. We can fly our fighters off of here if they can get off the ground, if they come in.

One thing about the Navy, you know, everybody talks about if you sink an aircraft carrier, you have really done it. But they have air defense. At these air bases they don't have any air defense.

I swear to you in Korea, you know, they are 20 minutes away from the North Korean border, the air base, and they don't have any air defense. And where they do have it the Army is there to protect the Air Force. It is a strange phenomenon.

I seems the Navy is taking care of their airfields pretty well. I mean, nothing is perfect, obviously. You know, it is a nuclear weapon, it is going to go anyway.

Admiral BACIOCCO. And the Marines do, too, I might add.

Mr. SISISKY. But it just dawned on me they are doing something to take care of air attacks and submarine attacks.

Mr. HUNTER. We need a CIWS for the Divad request. Something along that line.

Mr. SISISKY. Well, you might need it.

You know there was a question I wanted to ask you. Every year that I have been sitting here I have been noticing, and I think the figure is right, $2 billion for the D-5. When in the hell are we going to get through with that thing? I mean why is the research and development, and how much have we spent on that thing? That is an enormous sum of money.

Admiral BACIOCCO. Yes, sir, But you know when you consider that [deleted] of the strategic warheads this Nation owns are at sea in Navy ships for about 10 percent of Navy TOA that is not bad.

The D-5 program is proceeding just fine. We do the first launches [deleted] and it will IOC on time in [deleted].

Mr. SISISKY. But your research and development is not to manufacture any——

Admiral BACIOCCO. The first.

Mr. SISISKY [continuing]. Is it?

Admiral BACIOCCO. No, sir.

Mr. SCHAFER. They build quite a few missiles in R&D for testing.

Admiral BACIOCCO. Where is that first standpipe slide? The D-5 is the Trident II missile, sir. The unfilled portion of the standpipe is the D-5 system. Basically, you know you are looking for a system that is going to have a reliability that is very, very high. We have basically done all the subsystem testing through [deleted] which is the last big year. Of course that is developing the fire control system, it is developing what you have to do to support the testing, to prove that you are getting the accuracy you want. It starts going down in our current request to $1.6 billion and then $1.1 billion, and it essentially tapers off after [deleted] more years.

Mr. SISISKY. I don't object to the D-5 because that is the true mobile missile.

Admiral BACIOCCO. Yes, sir.

Mr. SISISKY. I don't argue that. I mean that is the mobile missile. I don't know why we are spending money——

Admiral BACIOCCO. The true mobile survivable missile.

Mr. HUNTER. Let's ask one question about strategic homeporting while we are at it. This is out of your area, but just let me ask you something. This GAO report just came out that says it is going to cost a lot of bucks, a lot more than we figured. It is responding to Senator Strom Thurmond's request. I just hope that you guys will put your oar in the water when it comes to prioritizing these billions of dollars for the post-Gramm-Rudman Navy budget. That it might be a good idea, perhaps, to spend a little more money on RDT&E and maybe a little less on MilCon and other places when we have the berths in existing homeports to put these ships. I hope you will have a chance to have some input on it.

Admiral BACIOCCO. Yes, sir. And we do. We work very hard to put things in balance and to ensure a balanced program. I don't mean that just in a rhetorical sense. We have grown in R&D significantly to the point where we have regained what has been a traditional percentage on Navy TOA in R&D, approaching 10 percent. We are forced down in the next couple of years, but we clearly see some more growth.

Mr. HUNTER. You may have to get in there and fight on this homeporting thing.

Admiral BACIOCCO. Oh, yes; sir.

Mr. SISISKY. Are there any further questions?

Mr. HUNTER. I knew you would like that one.

Mr. SISISKY. Admiral and captain, we appreciate your testimony today.

Admiral BACIOCCO. Thank you.

Mr. SISISKY. With no further business, the meeting is adjourned.

[Whereupon, at 4:10 p.m., the subcommittee was adjourned, to reconvene on Tuesday, February 25, 1986, at 9 a.m.]

OTHER PROCUREMENT, NAVY; AND WEAPONS PROCUREMENT, NAVY

House of Representatives,
Committee on Armed Services,
Seapower and Strategic and
Critical Materials Subcommittee,
Washington, DC, Tuesday, February 25, 1986.

The subcommittee met, pursuant to call, at 2:05 p.m., in room 2212, Rayburn House Office Building, Hon. Norman Sisisky presiding.

STATEMENT OF HON. NORMAN SISISKY A REPRESENTATIVE FROM VIRGINIA

Mr. Sisisky. The subcommittee will come to order.

Today, the subcommittee will hear testimony on portions of the Navy weapons procurement and other procurement accounts. Within these accounts the Navy is seeking just over $5.5 billion within the subcommittee's jurisdiction, or about 6 percent more than last year's appropriations.

Appearing before the subcommittee are Rear Adm. William Smith, who will discuss the other procurement request and Rear Adm. Robert Ailes, who will describe the weapons procurement request.

Gentlemen, it is nice to have you here, and you may proceed.

STATEMENT OF REAR ADM. WILLIAM D. SMITH, DIRECTOR, FISCAL MANAGEMENT DIVISION, OFFICE OF PROGRAM PLANNING, DEPARTMENT OF THE NAVY

OTHER PROCUREMENT, NAVY

Admiral Smith. Mr. Chairman, members of the committee, it is a pleasure to appear before you to present the fiscal year 1987 budget request for the other procurement, Navy appropriation, and to have Admiral Ailes present the WPN appropriation as well. The OPN appropriation has been carefully structured to provide the necessary funding to improve our warfighting sustainability and fleet modernization. In combination with weapons procurement, Navy funding, the fiscal year 1987 OPN budget request provides the necessary resources to continue moving toward the overall Department of Defense munitions sustainability objective. The modernization funding in this request continues to gain greater significance as the fleet builds toward the 600-ship Navy and we extend our average ship service life.

The other procurement, Navy appropriation is essentially the same in program content and structure as presented last year. The fiscal year 1987 OPN budget request is $6,538.8 million. There are approximately 330 separate programs in this appropriation which finance the procurement of Naval ammunition and equipment other than aircraft, missiles, ships, and torpedoes. This process supports programs designed to improve the active fleet and shore establishment by introducing new or replacement components which expand or maintain existing capabilities. The fiscal year 1987 request of $6,538.8 million is $157.5 million, or 2.5 percent, above the approved fiscal year 1986 program. Adjusted for inflation this request reflects no real growth.

The focus of today's presentation will be on those portions of the other procurement, Navy appropriation under cognizance of this committee. The $4.041.8 million requested for equipments included within your purview comprise 61.8 percent of the total value of the fiscal year 1987 OPN appropriation. The remaining items in the OPN request are under the cognizance of the Procurement Subcommittee.

One point I would like to discuss briefly is the impact of congressional action on the OPN appropriation. In the last few years the authorization/appropriation processes have constrained our flexibility in that each budget activity has been authorized and appropriated separately. While line items each have a $10 million reprogramming threshold, any increase to the authorized and appropriated total of a budget activity requires a prior approval reprogramming request, which uses transfer authority and requires extensive time to accomplish.

However, during the 1986 congressional review an undistributed reduction was applied at the appropriation level. This released some of these constraints and allowed us to adjust programs with minimal impact. If this reduction had been applied at the budget activity level, the Department could have been forced to cut programs within one budget activity even though sufficient savings were present within the entire appropriation.

In order to further optimize the use of OPN funds, both of the following actions are requested for your consideration: First, authorize and appropriate OPN as a single appropriation, as opposed to separate budget activities. The $10 million line item threshold will still preclude significant adjustments without prior approval of Congress. Second, include language to permit undistributed reductions to be identified throughout the first year of execution rather than prior to submission of the next year's budget, as is now the case. This would permit the reductions to be applied in areas with cost savings and program slips, instead of forcing undesirable program reductions required to be identified prior to submission of the following year's President's budget.

Neither of these actions would reduce congressional control of the programs in this appropriation. On the other hand, each would allow execution of these congressionally approved programs in a timely manner, which maximizes the return for each available dollar in the appropriation.

TABLE 1.—OTHER PROCUREMENT, NAVY; BUDGET ACTIVITIES

[In millions of dollars]

	Fiscal year—		
	1986	1987	1988
Total request	$6,381.3	$6,538.8	$7,755.4
Ship support equipment	907.5	1,054.4	1,159.0
Communications and electronics equipment	2,016.1	2,031.4	2,529.9
Aviation support equipment	1,141.4	963.5	1,143.6
Ordnance support equipment	1,241.5	1,259.8	1,463.1
Civil engineering support equipment	229.4	267.3	277.5
Supply support equipment	58.9	82.2	138.2
Personnel and command support equipment	526.5	556.3	634.7
Spares and repair parts	260.0	323.9	409.4

TABLE 3.—OTHER PROCUREMENT, NAVY; BREAKDOWN OF FISCAL YEAR 1987 BUDGET REQUEST BY COGNIZANT HASC SUBCOMMITTEE BUDGET ACTIVITIES

[Dollars in millions]

Program by budget activities	Total fiscal year 1987 budget request	Subcommittee on Seapower and Strategic and Critical Materials	Subcommittee on Procurement and Military Nuclear Systems
Total request	(100%) $6,538.8	(61.8%) $4,041.8	(38.2%) $2,497.0
1. Ship support equipment	1,054.5	1,054.4	0
2. Communications and electronics equipment	2,031.4	1,727.6	303.8
3. Aviation support equipment	963.5	0	963.5
4. Ordnance support equipment	1,259.8	1,259.8	0
5. Civil engineering support equipment	267.3	0	267.3
6. Supply support equipment	82.2	0	82.2
7. Personnel and command support equipment	556.3	0	556.3
8. Spares and repair parts	323.9	0	323.9

As I mentioned earlier, the appropriation encompasses 330 separate line items and thousands of equipments, components, and spare parts. On my briefing chart, to your left, I show the line items that are divided into eight budget activities, either by equipment or warfare/mission commonality. As a portion of the total Navy request, OPN comprises 6.3 percent of the fiscal year 1987 service budget, which, as a proportion, is essentially unchanged from last year. That portion of the OPN appropriation under Seapower Subcommittee cognizance is shown here.

Discussion in today's hearing will focus on ship support equipment, most of the communications and electronics equipment, and ordnance support equipment. I would like to emphasize that most of this equipment is procured in support of the Navy's Fleet Modernization Program [FMP]. Throughout a ship's life cycle it becomes necessary to replace mechanical, electrical and electronic equipment either to eliminate obsolete components or to upgrade warfighting capability. Average ship service lives have lengthened from 26 to 30 years or more in the last decade, and there is now a greater number of platforms in service requiring OPN-procured hardware support.

At the same time, our fiscal year 1987 OPN budget request reflects no real growth over the fiscal year 1986 appropriation. The net effect is that in fiscal year 1987 the Navy cannot afford to completely upgrade its warfighting capability.

DON BUDGET REVIEW, FISCAL YEAR 1987 OTHER PROCUREMENT, NAVY

Request within Navy: $7,374.5 M
Request to Congress: $6,538.8 M
Review criteria:
  - Unit pricing
  - Navy's production approval process timed with budget submission
  - Contractor delivery dates, versus overhaul installation schedules
  - Planned contract award dates
  - Prior year program obligation and expenditure performance
  - Outyear programming decisions
  - Navy funding priorities

As I mentioned in my prepared statement, my staff thoroughly reviews the OPN budget request line item by line item. Hearings are conducted for each of the 330 programs within the appropriation, and I personally review this process. Last summer we were able to trim $835 million in the fiscal year 1987 budget from the amount reflected in the "Fiscal Year 1987" column of the 1986 budget request. Criteria used throughout our review are shown on this Vu-Graph.

Programming decisions account for almost one-half of these changes with contract delivery slippages being the next most significant category.

OTHER PROCUREMENT, NAVY; BUDGET ACTIVITY 1

[In millions of dollars]

	Fiscal year—		
	1986	1987	1988
Ship support equipment	907.5	1,054.4	1,159.0
Hull mechanical and electrical equipment	237.5	314.2	350.8
Ship propulsion equipment	70.5	92.0	73.7
Pumps	11.1	18.5	9.9
Navigation equipment	54.6	46.8	41.6
Other hull mechanical and electrical equipment	101.3	156.9	225.6
Reactor plant equipment	391.1	430.4	526.6
Reactor power units	163.4	202.5	290.5
Reactor components	227.7	227.9	236.1
Other shipboard equipment	278.9	309.8	281.6
Submarine silencing equipment	18.0	27.1	14.2
Strategic platform support equipment	53.8	72.8	120.7
Sealift support equipment	63.8	58.3	37.2
Surface IMA	7.0	21.9	25.7
Chemical warfare detectors	15.4	10.9	14.5
Naval special warfare equipment	37.4	31.7	33.9
Other	83.5	87.1	35.4

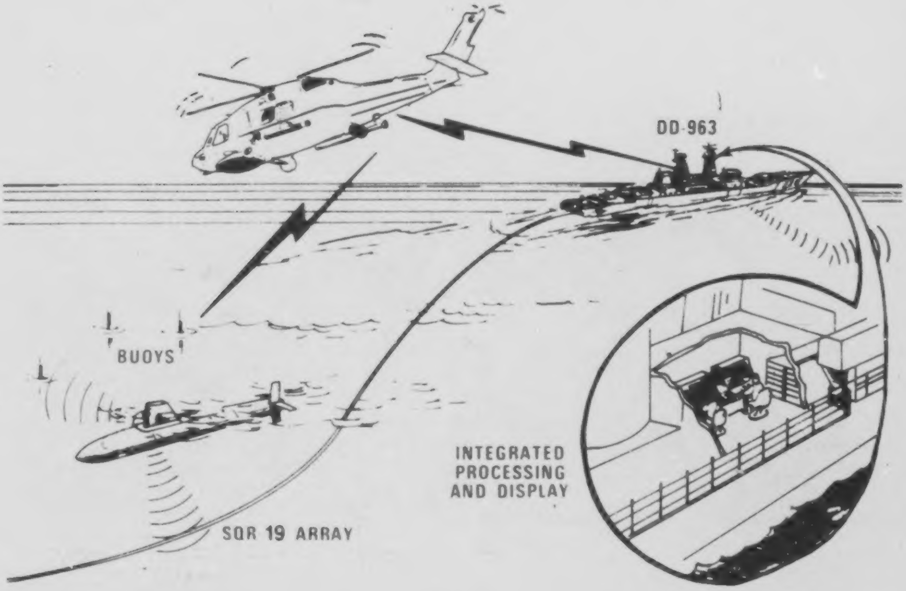
This slide shows the breakdown of the request for Budget Activity 1, Ship Support Equipment. This budget activity provides funding for hull, mechanical and electrical equipment including such vital shipboard items as pumps, generators and navigation equipment. In addition to the other major equipment shown on this table, highlights of other items funded in this budget activity are shown in the following slides.

Atlantic Ocean.—A Port Quarter Bow View of the Nuclear-Powered Guided Missile Cruiser U.S.S. *Virginia*, CGN-38, Underway

In addition to hull, mechanical, and electrical components, Budget Activity 1 funds replacement cores for our nuclear-powered submarines and surface ships. The Sealift Support Equipment line includes funding for sea sheds, and flat racks, which enhance our flexibility in deck loading heavy cargo aboard MSC transports.

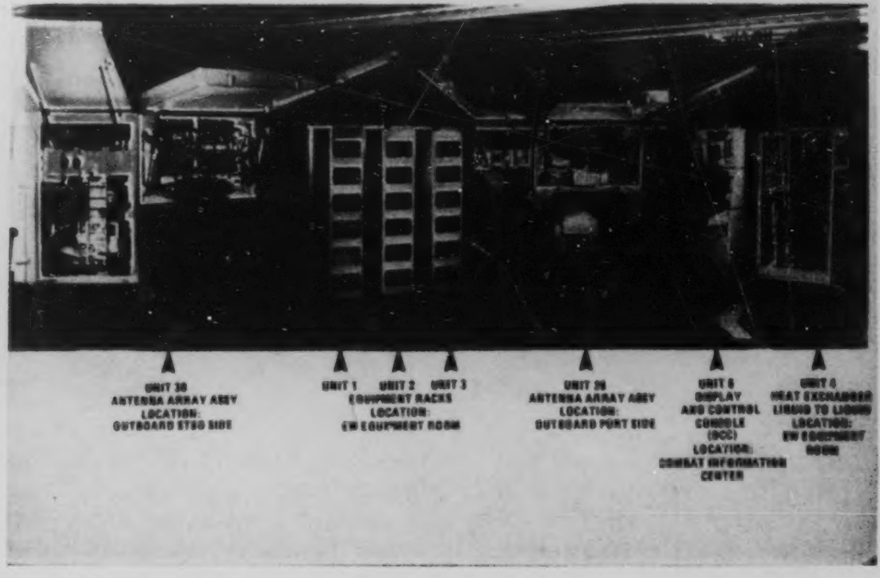
Atlantic Ocean.—A Port Bow View of the Nuclear-Powered Attack Submarine U.S.S. *Los Angeles* (SSN-688) Underway

In addition to reactor cores and components, silencing equipment, navigation equipment and batteries, are also procured for our nuclear submarine force. The Strategic Platform Support Equipment line includes funding for hull, mechanical, and electrical equipment to support our Trident submarine force.


DD-963
BUOYS
INTEGRATED PROCESSING AND DISPLAY
SQR 19 ARRAY

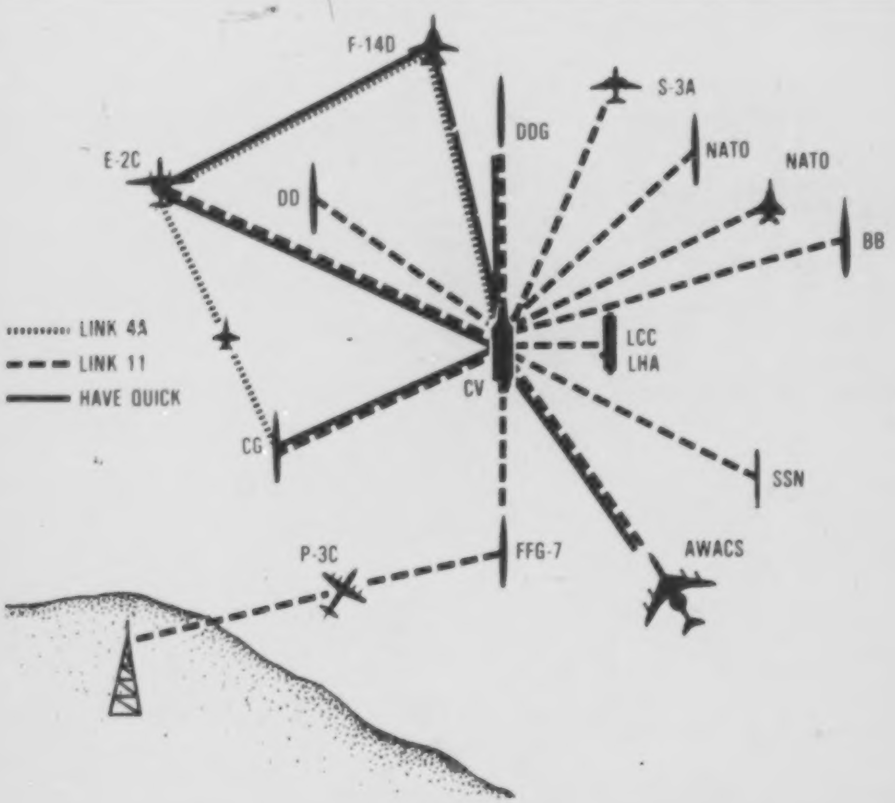
Budget Activity 2, Communications and Electronics, is the largest budget activity in the OPN appropriation. Significant Budget Activity 2 items within the purview of this committee include the AN/SQR-19 tactical towed array sonar [Tactas], which will serve as the primary passive acoustic sensor in the surface fleet for long range submarine prosecution.

AN/SLQ-32(V)3


UNIT 30
ANTENNA ARRAY ASSY
LOCATION:
OUTBOARD STBD SIDE
UNIT 1
UNIT 2
UNIT 3
EQUIPMENT RACKS
LOCATION:
EW EQUIPMENT ROOM
UNIT 29
ANTENNA ARRAY ASSY
LOCATION:
OUTBOARD PORT SIDE
UNIT 5
DISPLAY
AND CONTROL
CONSOLE
(DCC)
LOCATION:
COMBAT INFORMATION
CENTER
UNIT 4
HEAT EXCHANGER
LIQUID TO LIQUID
LOCATION:
EW EQUIPMENT
ROOM

The SLQ-32 passive electronic warfare sensor for our surface ships, ELF communications equipment for the submarine force, and countermeasures equipment to improve our warfighting capability in a hostile magnetic environment.

NAVY TACTICAL DATA SYSTEMS



Funding for modernization of our Navy Tactical Data Systems is the largest single item in the Other Ship, Electronic Equipment category. This system permits rapid integration of ship sensor information, analysis and display of tactical information, and designation of weapons systems, and is installed on the majority of our surface ships.

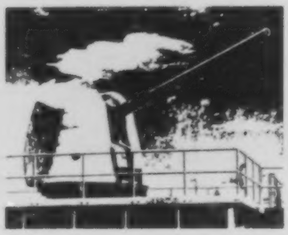
TABLE 6.—OTHER PROCUREMENT, NAVY; BREAKDOWN WITHIN BUDGET ACTIVITY 4

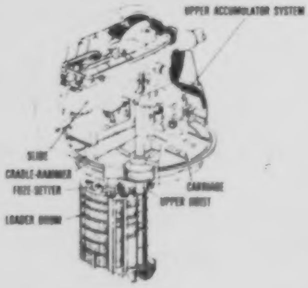
[In millions of dollars]

	Fiscal year—		
	1986	1987	1988
Ordnance support equipment	$1,241.5	$1,259.9	$1,463.2
Ship missile system equipment	406.7	483.5	588.4
Ship gun ammunition	219.1	306.4	288.0
Ship gun system equipment	58.7	40.1	19.6
FBM support equipment	146.9	105.3	125.0
ASW support equipment	132.4	148.8	192.3
Other ordnance support equipment	30.6	36.1	46.8
Other expendable ordnance	147.1	139.6	204.1

This is a summary of the Ordnance Support Equipment budget activity. Through congressional action our fiscal year 1986 funding level for OPN-funded war reserve munitions increased significantly. These programs are directly related to our increasing emphasis on conventional warfighting sustainability.

5"/54 MK 45 MOD 0





MISSION:

THIS HIGHLY RELIABLE 5" GUN IS DESIGNED TO PROVIDE EFFECTIVE. ACCURATE GUN FIRE SUPPORT IN THE ANTI-SHIP MISSIONS AND AMPHIBIOUS OPERATIONS FOR NEW CONSTRUCTION DLGN, DD AND LHA CLASS SHIPS

FEATURES:

- LIGHTWEIGHT
- FULLY AUTOMATIC OPERATION
- HIGH RELIABILITY
- ALL WEATHER CAPABILITY
- REDUCED SPACE AND MANNING REQUIREMENTS
- LOW LIFE CYCLE COSTS
- MAXIMUM SAFETY
- NO PERSONNEL REQUIRED IN MOUNT

CHARACTERISTICS:

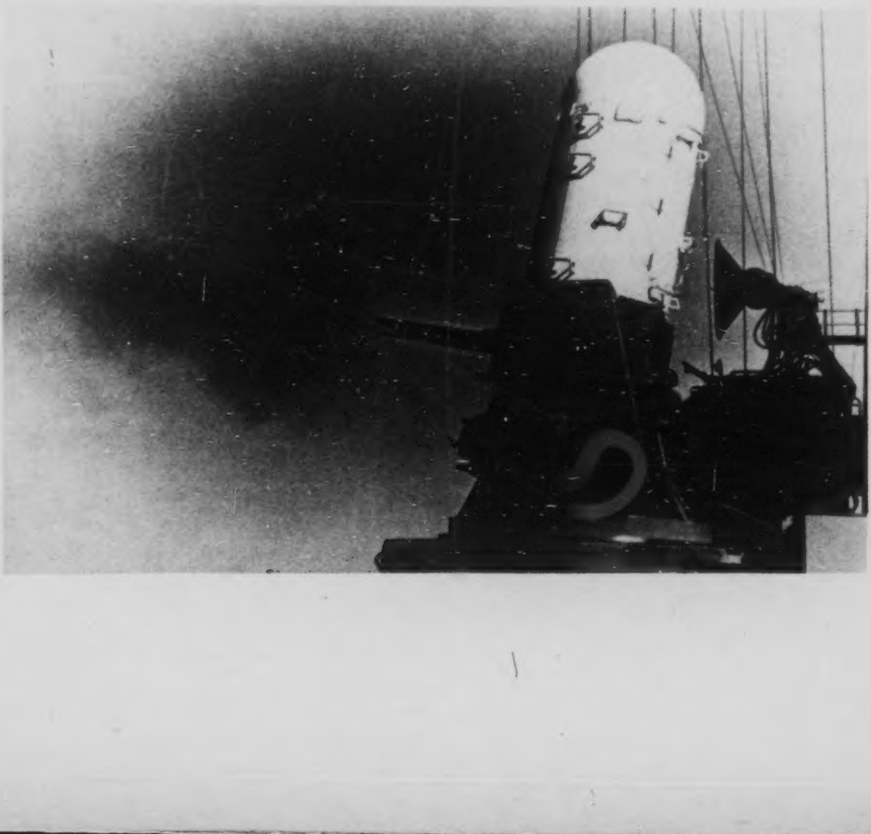
MOUNT WEIGHT (DRY WEIGHT)	49,000 LBS
LOADER DRUM CAPACITY	20 RDS
PROJECTILE WEIGHT	70 LBS
INITIAL VELOCITY	2,650 FT/SEC
RANGE	26,000 YD
RATE OF FIRE	16-20 RPM
PERSONNEL REQUIRED	6

COMPATIBLE WITH ALL EXISTING 5" AMMO INCLUDING RAP AND GUIDED PROJECTILE

This budget activity includes shipboard ammunition such as that used in the 5-inch/54 gun, which is the most common gun mount in the surface fleet. At the end of fiscal year 1986, 143 ships of the surface Navy will utilize this multipurpose gun mount against air, surface, and shore targets.

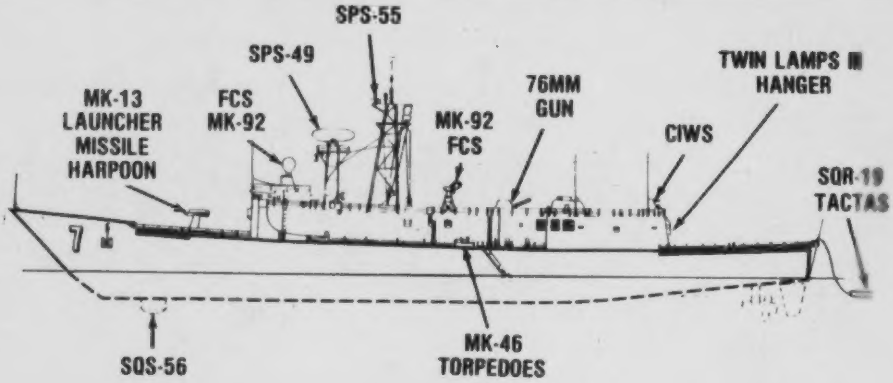
Gulf of Mexico.—A Port Bow View of the Battleship *Iowa* (BB-61) Underway During Sea Trials

This budget activity also includes 16-inch gun ammunition for our reactivated battleships.



Close-in weapons system ammunition for antiship missile self-defense, and various types of small ammunition used to protect ship security and to arm naval landing forces.

FFG-7 CLASS COMBAT SYSTEMS



AAW	ASW	SUW
MK92 FIRE CONTROL SYSTEM	AN/SQS-56 (ACTIVE SONAR)	AN/SPS-55
MK-13 MOD 4 MISSILE LAUNCHER	AN/SQR-19 (PASSIVE SONAR)	MK-13 MOD 4 LAUNCHER
STANDARD MISSILE (SM-1)	MK-46 TORPEDO TUBES	HARPOON MISSILE
MK-75 76MM GUN	LAMPS III (2 HELOS REPLACES LAMPS I)	MK-75 76MM GUN
CIWS		STANDARD MISSILE
AN/SPS-49 RADAR		

Other than conventional ammunition procurement, Budget Activity 4 is also funded for procurement of fire control radars and missile launch systems. This view of the FFG–7 class guided missile frigate shows several systems supported in this appropriation, such as the MK–13 missile launcher, the M–92 fire control system, the SPS–49 radar, ammunition for both the 76-millimeter gun and the CIWS, as well as the AN/SQR–19 TACTAS.

In summary, there are two major aspects of this appropriation request. Fleet modernization equipment, or about one-half of the programs within your purview, are an economical way to extend the effective life of existing ships, make them more reliable and effective, and improve their warfighting capability. No less important, sustainability funding for conventional war reserves is crucial to attaining the objectives of our 600-ship Navy.

Sir, this concludes my presentation. I am ready for your questions.

PREPARED STATEMENT OF REAR ADM. WILLIAM D. SMITH

Mr. Chairman and members of the Committee, I appreciate the opportunity to appear before you to present the FY 1987 budget request for the Other Procurement, Navy (OPN) appropriation.

The Other Procurement, Navy appropriation remains essentially the same in program content and structure as presented last year. The FY 1987 OPN budget request is $6,538.8 million. There are approximately 330 equipment programs in this appropriation which finance procurement of weapons and equipment other than aircraft, missiles, ships, and torpedoes. These procurements support programs designed to modernize the active fleet and shore establishment by the introduction of equipments which enhance existing warfighting capabilities. Equipments funded range from state-of-the-art naval weapons systems to spare parts, trucks, medical equipment and simple shop equipment. Other items funded include air and ship launched ammunition to meet combat requirements and training readiness; nuclear reactor cores and components for surface ships and submarines; and training equipment in support of shipboard operational equipment.

The FY 1987 request of $6,538.8 million supports continued improvements in fleet warfighting capability and is summarized by Budget Activity in Table (1). A point I would like to make is that a large portion of the equipments procured in OPN are related to our ongoing fleet modernization effort. During regular overhauls or shorter availability periods, it is necessary to replace many of the components of a ship's hull, mechanical and electrical systems in order to eliminate obsolete equipment and improve efficiency and ease of maintenance. Examples of such equipments are pumps, generators, air compressors, propellers, steam plant components, and nuclear reactor components. Similarly, as the technology of modern warfare grows more sophisticated during the ship's life, it is necessary to upgrade many of the pons, sensors, communications systems, and tactical data processing suites on the ship. Our recent experience is that the average ship service life since the 1970's has increased from 26 to 30 years or more. At the same time this increasing number of older hulls require OPN equipment support, the FY 1987 request has remained nearly level in terms of real growth over FY 1986 (Table 2).

TABLE 1
OTHER PROCUREMENT, NAVY
BUDGET ACTIVITIES
($ In Millions)

	FY 1986	FY 1987	FY 1988
TOTAL REQUEST	6,381.3	6,538.8	7,755.4
o SHIP SUPPORT EQUIPMENT	907.5	1,054.4	1,159.0
o COMMUNICATIONS AND ELECTRONICS EQUIPMENT	2,016.1	2,031.4	2,529.9
o AVIATION SUPPORT EQUIPMENT	1,141.4	963.5	1,143.6
o ORDNANCE SUPPORT EQUIPMENT	1,241.5	1,259.8	1,463.1
o CIVIL ENGINEERING SUPPORT EQUIPMENT	229.4	267.3	277.5
o SUPPLY SUPPORT EQUIPMENT	58.9	82.2	138.2
o PERSONNEL AND COMMAND SUPPORT EQUIPMENT	526.5	556.3	634.7
o SPARES AND REPAIR PARTS	260.0	323.9	409.4

TABLE 2
OTHER PROCUREMENT, NAVY
BUDGET ACTIVITY GROWTH
($ In Millions)

	FY 1986	CHANGE	FY 1987
TOTAL REQUEST	6,381.3	+157.5	6,538.8
o SHIP SUPPORT EQUIPMENT	907.5	+146.9	1,054.4
o COMMUNICATIONS AND ELECTRONICS EQUIPMENT	2,016.1	+15.3	2,031.4
o AVIATION SUPPORT EQUIPMENT	1,141.4	-177.9	1,259.8
o ORDNANCE SUPPORT EQUIPMENT	1,241.5	+18.3	1,259.8
o CIVIL ENGINEERING SUPPORT EQUIPMENT	229.4	+37.9	267.3
o SUPPLY SUPPORT EQUIPMENT	58.9	+23.3	82.2
o PERSONNEL AND COMMAND SUPPORT EQUIPMENT	526.5	+29.8	556.3
o SPARES AND REPAIR PARTS	260.0	+73.9	323.9

TABLE 3
OTHER PROCUREMENT, NAVY
BREAKDOWN OF FY 1987 BUDGET REQUEST
BY COGNIZANT HASC SUBCOMMITTEE
BUDGET ACTIVITIES
($ In Millions)

PROGRAM BY BUDGET ACTIVITIES	TOTAL FY 1987 BUDGET REQUEST	SUBCOMMITTEE ON SEAPOWER AND STRATEGIC AND CRITICAL MATERIALS	SUBCOMMITTEE ON PROCUREMENT AND MILITARY NUCLEAR SYSTEMS
	(100%)	(61.8%)	(38.2%)
TOTAL REQUEST	6,538.8	4,041.8	2,497.0
1. SHIP SUPPORT EQUIPMENT	1,054.5	1,054.4	0
2. COMMUNICATIONS AND ELECTRONICS EQUIPMENT	2,031.4	1,727.6	303.8
3. AVIATION SUPPORT EQUIPMENT	963.5	0	963.5
4. ORDNANCE SUPPORT EQUIPMENT	1,259.8	1,259.8	0
5. CIVIL ENGINEERING SUPPORT EQUIPMENT	267.3	0	267.3
6. SUPPLY SUPPORT EQUIPMENT	82.2	0	82.2
7. PERSONNEL AND COMMAND SUPPORT EQUIPMENT	556.3	0	556.3
8. SPARES AND REPAIR PARTS	323.9	0	323.9

The focus of today's presentation will be on those portions of the Other Procurement, Navy appropriation under the cognizance of the Subcommittee on Seapower and Strategic and Critical Materials. A total of $4,041.8 million has been requested for equipments included under the purview of this subcommittee. These equipments comprise 61.8 percent of the total value of the OPN appropriation request. Remaining items in the OPN request are within the purview of the Procurement Subcommittee (Table 3).

Before I discuss the specific programs included in our FY 1987 budget request, I would like to explain the Department's budget process. Each year, the Department of the Navy conducts a detailed budget review on all appropriations. During the summer of 1985, hearings were held on each of the 330 OPN line items. Criteria considered during this review process included:

a. Unit Price: Unit prices must reflect approved inflation escalation indices, consider quantity changes, and pass the reasonableness check.

b. Production Approval: Production approval must be granted in time to permit end item procurement in the year for which OPN funding is requested.

c. Delivery Schedules: End item deliveries and installation schedules must coincide with ship overhaul and restricted availability schedules.

d. Contract Award Dates: Requested funds cannot be deferred until the following year without delaying installation schedules.

e. Prior Year Execution Performance: Prior year contract award schedules are reviewed to determine whether budgeted plans are reasonable.

f. Programming Changes: Budget requests are updated to support outyear program changes reflected in the Program Objective Memorandum (POM) process.

g. Program Priorities: Within financial constraints, the budgeted program reflects the Department's current priorities.

This request is $835.8 million or 11.3% less than the amount reflected last year in the FY 1987 column of the 1986 President's Budget. These savings can be attributed to close scrutiny in the budget review process and taking competitive contracting and inflation savings to our advantage.

I would also like to address the impact of recent Congressional action on the OPN appropriation. In the last few years, the authorization and appropriation processes have constrained our flexibility in that each budget activity has been authorized and appropriated separately. While line items each have a $10 million reprograming threshold, any increase to the authorized and appropriated total of a budget activity requires a prior approval reprograming request which uses transfer authority and requires extensive time to accomplish. During the FY 1986 Congressional review, an undistributed reduction was applied at the appropriation level. This action released some of these constraints, and allowed the Department to reduce programs with minimal impact. Savings which have occurred within the appropriation have been applied to offset this reduction. If this reduction had been applied at, the budget activity level, the Department would have been forced to cut programs within one budget activity, even though sufficient savings were present within the entire appropriation or process a prior approval reprograming action. In order to further optimize the use of OPN funds, one or all of the following actions are requested:

a. Authorize and appropriate OPN as a single entity, vice by separate budget activities. The $10 million line item threshold will still preclude significant adjustments without the prior approval of Congress.

b. Include language to permit undistributed reductions to be identified throughout the first year of execution, rather than prior to the submission of the next year's budget as is now the case. This will permit the reductions to be applied in such areas as cost savings and program slips instead of forcing undesirable program reductions required to be identified prior to submission of the following year's President's Budget.

Neither of these actions would reduce Congressional control of the programs in this appropriation. On the other hand, implementing them would allow execution of these Congressionally-approved programs in a timely manner which maximizes the return for each available dollar.

As stated earlier, a large portion of the equipments procured in OPN, particularly Budget Activities 1, 2 and 4, are related to the Fleet Modernization Program. Since most of the aforementioned equipments are installed during regular ship overhauls, it is not necessary to procure all of the equipments in a single year. Rather, we phase the procurements in such a way that equipments are delivered shortly before each individual ship overhaul period begins. This means that most equipment procurement programs extend over a period of about five years, the length of time it usually takes for all of the ships covered to enter overhaul. The total quantity to be procured of any given equipment is calculated by ascertaining which ship classes are to receive the equipment and counting the number of ships in each class and the number of equipments per ship. Additional equipments are procured to satisfy shore-based training requirements, configuration control requirements, and depot repair requirements. The Navy's commitment to Fleet upgrade can best be measured by that portion of the OPN appropriation allocated to ship modernization programs. This portion has increased from $2,232.7 million or 35% of the FY 1986 OPN appropriation to a planning figure of $4,278.1 million which is 49% of the FY 1989 OPN program.

The first Budget Activity request is $1,054.4 million for Ship Support Equipment which is an increase of $146.9 million over FY 1986 (Table 4). The funding requested in this Budget Activity will procure equipments to modernize the hull, mechanical and electrical (H,M&E) capabilities in our current Navy ships, and procure nuclear power units and components for nuclear powered ships, and buy other shipboard equipment required to maintain and modernize the Fleet.

TABLE 4
OTHER PROCUREMENT, NAVY
BREAKDOWN WITHIN BUDGET ACTIVITY 1
($ in Millions)

	FY 1986	FY 1987	FY 1988
SHIP SUPPORT EQUIPMENT	907.5	1,054.4	1,159.0
o REACTOR PLANT EQUIPMENT	391.2	430.4	526.7
o OTHER SHIPS SUPPORT EQUIPMENT	329.1	475.3	506.9
o STRATEGIC PLATFORM SUPPORT EQUIPMENT	53.8	72.8	120.7

The FY 1987 request for Reactor Plant Equipment is $430.4 million, an increase of $39.2 million from FY 1986. The major items procured in this category are nuclear reactor cores required for refueling of nuclear powered ships. The FY 1987 procurement request includes $202.5 million for cores; and $227.8 million for replacement plant components and equipment required for the continued safe operation of the Navy's nuclear reactors. Replacement core procurement requests are based on long term Navy needs and have been approved for several years on the basis of being the most economical, efficient method of procuring replacement fuel for nuclear powered ships. Further, procurement in accordance with these stablized plans minimizes the risk of non-availability of cores for emergency replacement while maintaining a viable, two-vendor base for reactor cores.

Strategic Platform Support Equipment funding of $72.8 million will provide for the necessary shore-based support and planned equipment replacement required for the increasing numbers of TRIDENT submarines being introduced into the operating forces, primarily procurement of equipment required to outfit the TRIDENT Refit Facility at King's Bay, Georgia and the TRIDENT Training Facility at Bangor, Washington. Funding for this vital program is requested in three different budget activities. Funding in this budget activity supports the hull, mechanical, and electrical portions of the overall TRIDENT program.

The remaining funds requested in Budget Activity 1 ($475.4 million) will provide for procurement of various shipboard equipments to support improvement and modernization programs or as part of a planned maintenance replacement program. $34.5 million is requested for the Electrically Suspended Gyro Navigator (ESGN), which will replace and modernize the current inertial navigation systems on SSN-637 and SSN-688 class submarines. Sealift Support Equipment, for which FY 1987 funding in the amount of $52.3 million is requested, provides for the procurement of equipment to enhance the capability of merchant ships performing Naval auxiliary roles to resupply shuttle ships or underway replenishment ships. Among the key items procured in this line are sea sheds and flat racks. The Naval Special Warfare Equipment request of $31.7 million will furnish our Sea-Air-Land (SEAL) forces and Explosive Ordnance Disposal (EOD) Teams with necessary equipments to fulfill assigned missions.

Budget Activity 2, Communications and Electronics Equipment, is the largest budget activity in the OPN appropriation (Table 5). The FY 1987 budget request for Communications and Electronics Equipment under the purview of this subcommittee is $1,727.6 million, a decrease of $40.9 million from the FY 1986 budget.

TABLE 5
OTHER PROCUREMENT, NAVY
BREAKDOWN WITHIN BUDGET ACTIVITY 2*
($ In Millions)

	FY 1986	FY 1987	FY 1988
COMMUNICATIONS AND ELECTRONICS EQUIPMENT	1,768.4	1,727.6	2,048.9
• SHIP RADARS	156.0	138.4	166.0
• SHIP SONARS	217.5	220.3	211.5
• ASW ELECTRONICS EQUIPMENT	380.9	373.1	402.7
• RECONNAISSANCE AND ELECTRONIC WARFARE	245.6	278.9	425.9
• OTHER ELECTRONIC EQUIPMENT	187.1	162.4	196.2
• COMMUNICATIONS EQUIPMENT	393.8	393.2	519.8
• STRATEGIC PLATFORM SUPPORT EQUIPMENT	187.5	161.3	126.8

*Does not include Shore Communications, Shore Electronics, and Aviation Electronics Equipment.

The $138.4 million requested for Ship Radars will provide for the procurement of equipment to modernize the Navy's surface search radars, two-dimensional air search radars, and three-dimensional air search radars. The significant line items included in this category are the AN/SPS-48 three-dimensional air search radar ($48.8 million), the AN/SPS-49 two-dimensional air search radar ($17.0 million), the AN/SYS-2 Integrated Automatic Detection and Tracking System ($13.7 million), the MK-23 Target Acquisition System ($20.1 million), and the AN/SPS-40 two-dimensional air search radar ($17.7 million).

A significant level of funding is tied to the New Threat Upgrade combat system (NTU). Procurement of this NTU system, a surface ship anti-air warfare program designed to counter the latest missile threats, was initiated in FY 1983 and continues in FY 1987 with the procurement of four combat systems. The New Threat Upgrade combat system consists of many components which vary by platform and can be divided into the following major subsystems: (1) the new STANDARD SM-2 Block II missile, funded in the Weapons Procurement, Navy appropriation, (2) fire control engagement system modifications, funded in OPN Budget Activity 4, and (3) significant improvements to the AN/SPS-48 and AN/SPS-49 air search radars, which includes the addition of the AN/SYS-2 integrated automatic detection and tracking system that integrates the outputs of these two radars to provide a correlated track file. The AN/SPS-48E radar modification provides higher elevation angle coverage, increased average power output, and provides frequency and pattern flexibility to defeat jamming while detecting targets through heavy clutter. The (V)5 modification to the AN/SPS-49 radar provides enhanced electronic counter-counter measures (ECCM) processing and automatic target detection (ATD) capability. The AN/SYS-2 correlates contact data from the AN/SPS-48E and AN/SPS-49(V)5 and provides a single target output to the ship's command and decision system automatically. Installation of the New Threat Upgrade Combat System is planned for TERRIER missile ships of the CG-16 and CG-26 classes, as well as CGN-9, CGN-25, CGN-35 and DDG-42 (22 TERRIER ships). It is also planned for installation on TARTAR missile ships of the CGN-36, CGN-38 and DDG-993 classes (10 TARTAR ships).

The FY 1987 budget request for Ship Sonars is $220.3 million, an increase of $2.8 million from the FY 1986 budget of $217.5 million. $25.1 million is requested to continue the AN/SQS-53B surface ship sonar program which improves the maintainability of this sonar, reduces ship manning requirements, and allows integration of the AN/SQS-53 sonar with other sonar systems, such as the Tactical Towed Array Sonar (TACTAS), using standard modules. $83.3 million is requested for the AN/BQQ-5 submarine sonar to continue the procurement of modification kits to upgrade these sonars to the AN/BQQ-5C expanded DIFAR configuration and to continue production of the TBX array. AN/BQQ-5C modification kits have been in production since FY 1981 and provide a significant improvement of the acoustic sensors on our tactical submarines. The TBX array provides improved capability over the TB-16 array in detection, classification, tracking, and localization. $1.7 million is requested for Fleet Ballistic Missile System sonars to continue maintainability improvements aboard POSEIDON and TRIDENT I backfit submarines. Finally, $36.5 million is requested for replacement sonar switches and transducers for both surface ship and submarine sonars. These switches and transducers are significant fleet readiness items and must be available to replace defective units during scheduled ship overhauls.

The $373.2 million requested for Anti-Submarine Warfare (ASW) Electronics Equipment provides for the procurement of a diverse group of ASW-related equipments, and represents a decrease of $26.1 million from the FY 1986 request. $83.1 million is requested for continued modernization of both the underwater and the shore processing segments of our SOSUS system. Further, $112.4 million is requested for procurement of ten AN/SQR-19 Tactical Towed Array Sonar (TACTAS) systems. The AN/SQR-19 will serve as the primary long-range, passive acoustic sensor input to the LAMPS MK III ASW Helicopter system in our DD 963, FFG-7, and CG-47 Class Ships. $28.7 million is requested for follow-on procurement of new towed arrays and modification kits for the AN/SQR-18 Tactical Towed Array Sonar (TACTAS) system which is installed on most FF-1052 class ships. Other items requested in the ASW Electronics category include improvements to the AN/SQR-17 Acoustic Processor ($7.8 million), shore equipment in support of SURTASS ($19.8 million), and modernization of our shore-based ASW Operations Centers ($12.7 million). $27.9 million is requested for follow-on procurement of the Carrier ASW Module which supports embarked carrier ASW airborne weapon systems by providing real time and post mission analysis of acoustic signals. Finally, $46.2 million is requested for initial procurement of Submarine Advanced Combat Systems (SUBACS). SUBACS will perform combat systems management functions including target detection, classification and localization, weapons employment, and contact avoidance.

The $278.9 million requested for Reconnaissance and Electronic Warfare Equipment provides for the procurement of anti-ship missile defense (ASMD) electronic warfare (EW) systems such as the AN/SLQ-17 and the AN/SLQ-32, the procurement of cover and deception systems, and the procurement of tactical intelligence systems such as OUTBOARD and the Naval Intelligence Processing System (NIPS). In addition, the FY 1987 program includes $36.7 million for procurement of COMBAT DF, which provides the Electronic Warfare Signals and Direction Finding System with the capability to detect, locate, and identify targets at long range and to feed this information into the ship's tactical data system.

The $162.4 million requested for Other Electronics Equipment represents a decrease of $24.7 million from the FY 1986 request. A large portion of this funding ($104.7 million) is for continued modernization of the Navy Tactical Data System (NTDS) on frigates, cruisers, and aircraft carriers. NTDS is a vital system in major warships which permits rapid integration of ship sensor information, analysis and display of tactical information, and designation of weapon systems to force threats. Follow-on procurement funding for the Tactical Flag Command Center (TFCC) is also requested in FY 1987 ($17.2 million). This system is the Flag Commander's afloat interface with the Navy Command and Control System (NCCS).

The $393.2 million requested for Communications Equipment includes funding for general shipboard communications ($67.6 million), unique submarine communications ($91.5 million), satellite communications terminals ($43.5 million), cryptographic devices ($158.9 million), and cryptologic equipment ($12.0 million). In the shipboard communications area, funds are being requested to continue procurement of radios to replace older UHF and VHF equipment currently in the Fleet. Expanded procurement of Extremely Low Frequency (ELF) shipboard receiving systems ($30.8 million) is included in the submarine communications request. Within the $43.5 million requested for satellite communications terminals, $9.5 million is budgeted for continued procurement of Demand Assigned Multiple Access (DAMA) systems. The DAMA system provides a five to one increase in channel capacity on the LEASAT satellite system, thereby enabling LEASAT to have a capability comparable to FLTSATCOM. The $158.9 million budgeted for cryptographic devices provides for the continuing support of the Navy and Marine Corps communications security program. Although funded by Navy, the cryptographic devices are procured through the National Security Agency.

Also included in FY 1987 is $161.3 million for Strategic Platform Support Equipment which is requested to procure communications and electronic equipment to outfit the TRIDENT Refit Facility and the TRIDENT Training Facility at King's Bay, Georgia and to procure communications and electronics equipment for the overall TRIDENT program.

The FY 1987 request for Ordnance Support Equipment is $1,259.8 which represents an increase of $18.3 million as compared with FY 1986 (Table 6). A total of $306.4 million is requested for Ship Gun Ammunition which is an increase of $87.3 million over the FY 1986 program. Within this category, the 5"/54 Ammunition program request of $75.8 million will allow procurement of training and war reserve requirements in support of the 5"/54 Gun Mount, which is the most common gun mount in the surface fleet. $127.9 million is requested for continued procurement of 5 Inch Guided Projectile ammunition. With its laser guidance system, this projectile will provide the fleet with a high first shot hit probability previously lacking in surface gunnery systems. Other significant Ship Gun Ammunition procurements include $17.1 million for 76MM ammunition used in the MK-75 Gun Mount on the FFG-7 class ships and $41.8 million for Close In Weapon System (PHALANX) ammunition for anti-missile/self defense.

TABLE 6
OTHER PROCUREMENT, NAVY
BREAKDOWN WITHIN BUDGET ACTIVITY 4
($ In Millions)

	FY 1986	FY 1987	FY 1988
ORDNANCE SUPPORT EQUIPMENT	1,241.5	1,259.9	1,463.2
o SHIP MISSILE SYSTEM EQUIPMENT	406.7	483.5	588.4
o SHIP GUN AMMUNITION	219.1	306.4	288.0
o SHIP GUN SYSTEM EQUIPMENT	58.7	40.1	19.6
o FBM SUPPORT EQUIPMENT	146.9	105.3	125.0
o ASW SUPPORT EQUIPMENT	132.4	148.8	192.3
o OTHER ORDNANCE SUPPORT EQUIPMENT	30.6	36.1	46.8
o OTHER EXPENDABLE ORDNANCE	147.1	139.6	204.1

$483.5 million is requested for Ship Missile System Equipment which is a decrease of $23.1 million compared to the FY 1986 request. These equipments will continue to modernize and increase shipboard offensive and defensive missile capabilities. These programs include Surface Missile System (SMS) Ordnance Alterations (ORDALTS), AEGIS support equipment and Surface/Submarine TOMAHAWK Support Equipment. The SMS ORDALT program is designed to improve the reliability, performance, and safety of currently deployed missile systems: TERRIER, TARTAR, and NATO SEASPARROW (Point Defense). A significant item included in the FY 1987 request is $103.8 million for TERRIER and TARTAR Missile Systems Ordnance Alteration (ORDALT) equipment. Surface Missile System (SMS) ORDALTS also include the procurement of self-defense systems such as NATO SEASPARROW ($42.3 million), and associated improvements. The AEGIS Support Equipment request of $60.6 million will procure equipments necessary to support the in-service engineering and fleet training program for TICONDEROGA (CG-47) class AEGIS cruisers. The Vertical Launch System Program request of $137.8 million will provide funds to procure four complete systems to upgrade DD-963 warfighting capability. Finally, $102.6 million requested for TOMAHAWK support equipment will provide for automated weapon control and ORDALT procurement necessary to improve existing launcher systems.

The $40.1 million budgeted for Ship Gun Systems Equipment includes $19.2 million to enhance the performance of our Gun Fire Control Radars and $20.9 million to replace gun mounts in out Coast Guard vessels. The FY 1987 request for Strategic Platform support equipment is $105.3 million, a decrease of $41.5 million since last year. This funding will provide support and training equipment for the nation's first line strategic deterrent, the Fleet Ballistic Missile (FBM) Submarine. Equipment procured in this line will permit improvements required to maintain the operational capability of the current FBM Submarines and will also be installed in submarine tenders and shore bases providing direct FBM support. In addition, funds in this line will be used to procure ordnance support equipment required to outfit the TRIDENT Refit Facility and the TRIDENT Training Facility at King's Bay.

The ASW Support Equipment request in FY 1987 is $148.8 million, an increase of $16.4 million from FY 1986. The most significant program request included in the ASW Support Equipment category is $54.1 million for the All Digital Attack Center (MK-117 Fire Control System). The MK-117 System is installed aboard SSN-594, SSN-637 and SSN-688 class submarines, and provides a modern, high speed digital computing facility with digital driven display. This enables the submarine to conduct advanced target motion analysis, to automatically set the MK-48 torpedo, and to control and display weapon launch. The other major program in this category is $40.9 million for the ASW Control System (MK-116 Fire Control System). This program provides surface combatants with an integrated ASW combat system to effectively manage the large numbers of passive and active sonar contacts generated by the introduction of new systems such as the SQS-53B Sonar, TACTAS and LAMPS MK III.

A total of $195.7 million is requested in FY 1986 for Other Ordnance Support Equipment and Other Expendable Ordance which consists of a variety of other programs including procurement of Pyrotechnic and Demolition devices ($29.6 million) and QUICKSTRIKE mines ($29.8 million).

In summary, the varied equipments and munitions financed by this appropriation support the Navy's ship modernization warfighting capability, and combat sustainability objectives.

Mr. Chairman, this completes my prepared statement. I hope that this discussion provides a better understanding of the capability improvements which the Navy hopes to achieve through the execution of the FY 1987 Other Procurement, Navy budget.

I am ready to respond to any questions you, or members of the Committee may have.

Mr. SISISKY. Mr. Spence, do you have any questions?

Mr. SPENCE. No. Thank you.

Mr. SISISKY. Mr. Hartnett.

Mr. HARTNETT. I have no questions, Mr. Chairman.

Mr. SISISKY. Mr. Carney, do you have any questions?

Mr. CARNEY. Yes.

Admiral, is it possible to get the first slide back up with the breakdown of the total appropriation?

Admiral SMITH. Yes, sir.

Mr. CARNEY. One of the concerns that I saw there is the very large jump that we will have in this particular budget activity in fiscal year 1988. There is a small jump, obviously, in 1987, which would be, as you said, really no expansion at all given the inflation rate.

Admiral SMITH. Yes, sir.

Mr. CARNEY. But from fiscal year 1987 to fiscal year 1988 there is quite a substantial increase in several categories. I know that is not this year's budget, but I was wondering why there would be such a big change in the fiscal year 1988 budget compared to the constant levels of 1986 and 1987?

Admiral SMITH. Yes, sir. I would like to take that on in the general sense. You will notice that the Communications and Electronics Equipment shows a large increase as does the Ordnance Support Equipment. In the programming process within the Navy Department, the OPN account represents to the platform sponsors—the Deputy Chief of Naval Operations for Submarines, for Surface Warfare, and for Aviation—the major vehicle for modernizing their ships.

What happens in this process is that we are really forced by the way we operate our budgeting, planning, and programming process to take those items that we can't afford in the current year and slide them to the right. As I mentioned in my remarks, some $800 million of the fiscal year 1987 budget was moved out during our summer review, and about half of that was through the programming process or decisions which came from the realization that there wasn't sufficient funding to do all those things in the context of a balanced naval force. So a number of those items migrated from fiscal year 1987 into fiscal year 1988.

What I predict will happen during this year's budget process is that we will see a similar decrease in the size of the fiscal year 1988 account for the same reason. This would say to me that in our current planning and programming process we will come to the realization that we have too great an investment in the OPN appropriation in the 1988 timeframe, and that will be out of balance with the rest of our force structure.

If you let this particular account go unconstrained because of what the platform sponsors feel they have to have, it would not be unlikely to see that requirement almost double. But we can't let it go unconstrained because it has to be in balance with other forces. We are currently limiting this modernization effort to only the top priorities involving ship improvements. We have to fund mandatory safety items as found by our Board of Inspection and Survey. We add in the major weapons upgrades such as the Tomahawk upgrade, the Vertical Launch System for our surface ships and battleships and by the time we get through putting those into the fleet maintenance projects, we have basically used up the funding that we have in this account. So I would suspect that we will see the 1988 numbers being reduced in the like manner that I reported they were in in 1987.

Mr. CARNEY. What you are saying, in essence, is that you are having to do a little bit of smoke and mirrors.

Admiral SMITH. No, sir. It isn't really because the numbers will move to 1989.

Mr. CARNEY. Well, that is what I mean. We are never accomplishing what you feel the level for funding should be to fulfill the mission.

Admiral SMITH. That is right. The guys on the waterfront will always say that they could have used one more SHIPALT, one more improvement to each of these ships, and that there just wasn't enough money. But you see, sometimes it is also there isn't the time. We have to cut it off someplace to keep everything in balance. You could keep a ship in a repair status for a very lengthy period of time and just bring the next improvement out and put it onboard, but you wouldn't have any use of the ship. So we have to constrain the period and we do that artificially. We constrain it by saying we are going to give you this many months to repair the ship and it has to go back to the operating Navy.

Mr. **Carney**. Does the OPN account push off major shipbuilding programs or the major SLEP programs, for instance?

Admiral **Smith**. Not really. The force structure decisions within the programming and planning process are really made independently. In other words, we say this is the shape of the Navy, and then we look at when the ship is going to end its life. As you well know, in the Carrier Service Life Extension Program we say we need *x* number of carriers, and the current number is 15 battle groups worth, 15 carriers. So we then say we are going to extend this ship because there is a need, but before that extension can be valid we have to go inspect that ship and make sure——

Mr. **Carney**. But I would have to think that a SLEP program, for instance, would have a profound impact on the OPN aspect of the budget. What I am trying to say, maybe in a convoluted way, is the OPN keeping up with the calendar for SLEP programs, particularly in the aircraft carriers?

Mr. **Sisisky**. We welcome the chairman aboard.

Mr. Carney, would you continue, please? I am sorry for the interruption. Admiral, I think you were answering him, if I am not mistaken.

Mr. **Carney**. I pretty much think I have the answer. What you are saying is that the Navy feels the OPN budget is in balance with shipbuilding and SLEP programs.

Admiral **Smith**. Yes, sir.

Mr. **Carney**. The programs that this subcommittee does not have the responsibility for as well. The right hand is knowing what the left hand is doing.

Admiral **Smith**. Yes, sir. There are two pieces here. I think the platform sponsors would say that OPN is the most constrained of the budgets they deal with, relative to where they want to get for a capable warfighting force. We have to constrain it artificially because we want to keep it in balance.

Now, the CNO recognized several years ago that the Fleet Maintenance Program was an essential ingredient to take this OPN procurement and get it to the fleet. Last year, fiscal year 1985, we had a very successful year in which over 90 percent of the scheduled items that were procured in prior OPN years that were supposed to go on ships in that year were actually installed, and 99 percent were available with the schedule being the driver that kept us from getting that last 10 percent aboard. In other words, we didn't meet a commitment to modernize a ship because the funds weren't there or because we hadn't in prior years procured the equipment that we wanted to put on, but we couldn't get the ship in there because of some operational commitment that the ship had to make.

So I make that point because we are efficiently using these equipments in that installation process several years downstream after they have been procured and are ready for shipboard installation.

Mr. **Carney**. That is a little bit of my concern, but I guess you are comfortable given what we are dealing with this year. In essence, I guess what you must be saying is "give us what we are asking for now and we are going to have to juggle it and make it work."

Admiral **Smith**. Yes, sir.

Mr. **Carney**. But if you were to take substantial cuts in OPN in fiscal year 1987, considering what you are projecting for fiscal year 1988 and what probably will have to be slipped out of fiscal year 1988, we are going to soon start running into a wall, and I am somewhat concerned about that.

Admiral **Smith**. Yes, sir.

Mr. **Carney**. But I think we are just going to have to continue to address that.

Admiral **Smith**. Yes, sir.

Mr. **Carney**. Thank you, Admiral.

Mr. **Bennett** [presiding]. Mr. Bateman.

Mr. **Bateman**. Thank you, Mr. Chairman.

Admiral, let me see if I can focus more accurately on the area of procurement that we are involved with today. The Navy is going to acquire a new ship. That ship is going to require some of the equipment, the gadgetry, the communications, the armaments, the fire control, and so forth. Are we procuring through this account that equipment for the ships being constructed, or is this for the operational maintenance equipment and gadgetry to sustain and update the fleet that is already in existence?

Admiral **Smith**. Yes, sir.

Mr. **Bateman**. Or does this account do both?

Admiral **Smith**. This account buys those equipments for ships already——

Mr. **Bateman**. Already in being?

Admiral **Smith**. Yes, sir. We may have a contract for pumps and motors, of which an OPN portion is for commissioned ships and then there might be an SCN piece for new construction. OPN only buys for commissioned ships. Yes, sir.

Mr. **Bateman**. Thank you.

Mr. **Bennett**. Mr. Dyson.

Mr. **Dyson**. I have no questions, Mr. Chairman. I am just glad to see you at the helm.

Mr. **Bennett**. Well, thank you. I am very sorry that I was late in coming.

Adm. Robert Ailes, Director, Surface Combat Systems Division, we would like to hear from you now.

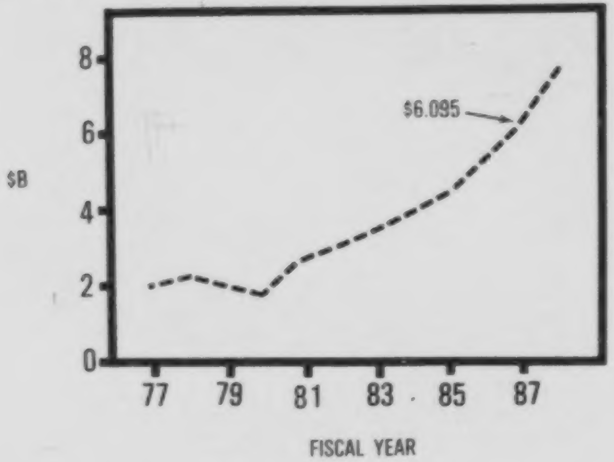
STATEMENT OF REAR ADM. ROBERT H. AILES, DIRECTOR, SURFACE COMBAT SYSTEMS DIVISION, OFFICE OF THE DEPUTY CHIEF OF NAVAL OPERATIONS FOR SURFACE WARFARE, DEPARTMENT OF THE NAVY

Admiral **Ailes**. Thank you, Mr. Chairman.

Mr. Chairman and distinguished members of the subcommittee, it is my privilege to appear before you and present the weapons procurement, Navy, request for fiscal year 1987. My purpose is to provide you with information regarding both the weapons procured through this appropriation and discuss our plans for managing the acquisition of these weapons systems.

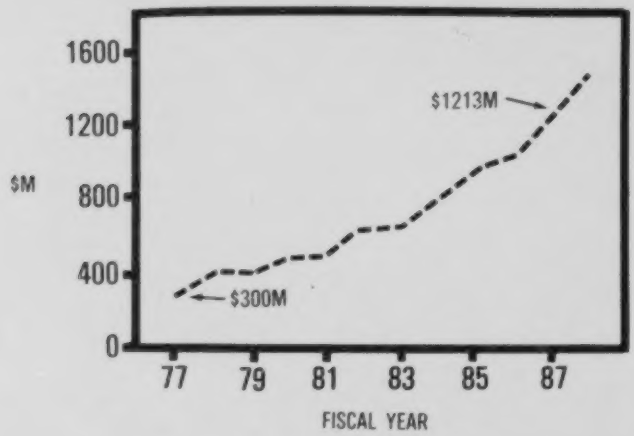
The overall fiscal year 1987 WPN request is for $6.1 billion, compared to last year's appropriation of $5.2 billion. This growth results primarily from our request to procure 21 Trident II missiles in fiscal year 1987. As you are well aware, Congress has made improved ordnance readiness and sustainability a top priority. You have backed that priority with expanded funding in recent years, and I will show you in a subsequent slide the results of what that funding is achieving.

WPN FUNDING TREND (BUDGET DOLLARS)



As the VuGraph before you on your left shows, the trend since 1981 contrasts sharply with the stagnation of funding evident from 1977 through 1980. The result has been a heartening growth of tactical weapons inventories as ordnance procured with fiscal years 1982 through 1985 funding as delivered to the fleet.

SEAPOWER SUBCOMMITTEE FUNDING TREND (BUDGET DOLLARS)



The Seapower Subcommittee exercises primary authority over antisubmarine warfare and gun systems within the WPN account. This graph shows the total funding for these areas. This year that segment of the request is for just over $1.2 billion. In fiscal year 1986 the appropriation was for approximately $1 billion. Contributing to this growth is the increased procurement of the MK-48 advanced capability torpedo and our initial procurement of the MK-50 advanced lightweight torpedo and vertical-launched ASW rocket weapons system.

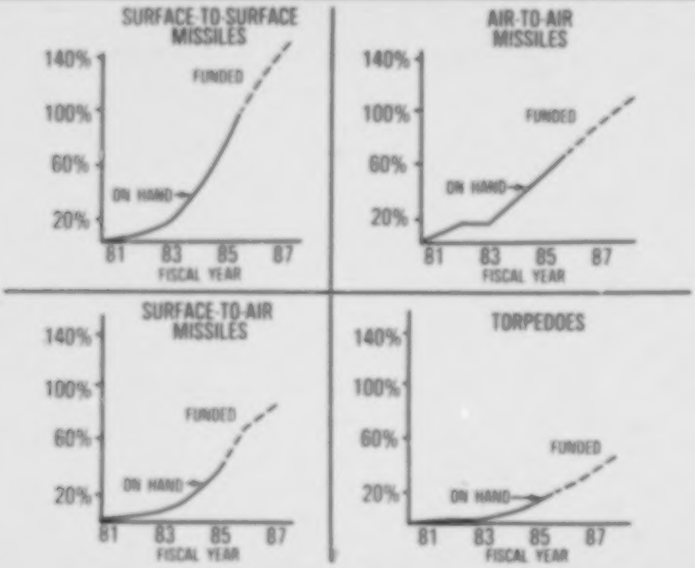
Let me focus on what the Navy has procured with the money you have appropriated over the past several years and how we intend to spend the funds we are requesting this year. A method we use to discuss our requirements we call the "four pillars" concept. These four pillars help us evaluate the balance of our programs between procurement for future capabilities and procurement for current combat needs.

The "force structure" pillar addresses ships and aircraft. "Modernization," or as I call it, "warfighting improvements" is funding to develop new systems or improvement to weapons in our current inventory. "Readiness" relates to training and maintenance of equipment. Finally, "sustainability" is procurement of the missiles, bullets, supplies, and reserve components necessary to keep our combat forces going in a prolonged conflict.

Sustainability is the principal component of the WPN appropriation and has been and continues to be the fastest growing portion of the Navy budget. It has gone from 4 percent of TOA in 1980 to about 10 percent at present.

ORDNANCE SUSTAINABILITY IMPROVEMENT

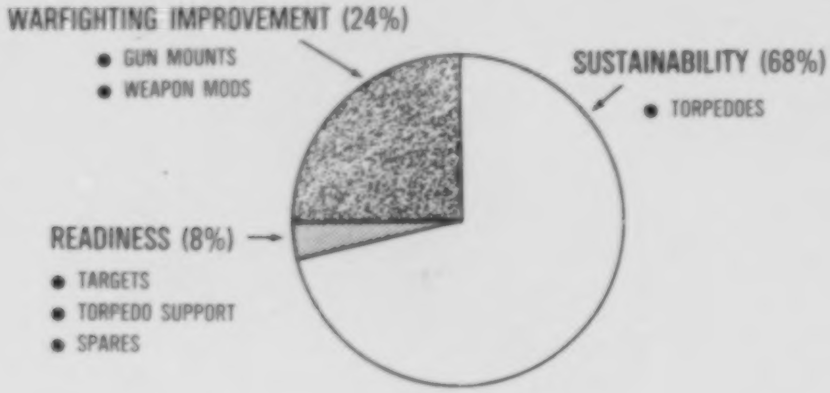
PERCENT INCREASE IN STOCKS ON HAND (BASE YEAR: FY 81)



Although we have not reached all goals in this area, as the VuGraph on your left shows we have made substantial progress in our ordnance inventory posture. As you can see on that VuGraph, it uses as a base case 1981, and it shows on the vertical axis the percentage increase in each individual item since that particular time.

Surface-to-surface missiles actually on hand, for example, have increased nearly 100 percent since 1981. Additionally, as you can see from the green part of the curves, which represents weapons that you have procured but that have not yet been delivered, the picture will continue to improve as ordnance already funded is delivered to the fleet.

BALANCE OF SEAPOWER SUBCOMMITTEE FUNDING
FISCAL 1987 BUDGET REQUEST



TOTAL BUDGET REQUEST:
$1213 MILLION

Focusing our attention to the Seapower Subcommittee's segment of the fiscal year 1987 budget request, this VuGraph highlights our continued commitment to sustainability. The procurement of torpedoes comprise 68 percent of the funds that are your specific cognizance. The 24-percent modernization slice procures the MK-15 Phalanx close-in weapon system. Phalanx, which has a demonstrated terminal defense capability against low-flying antiship cruise missiles or aircraft, is being procured and installed on virtually all Navy ships and a number of foreign ships. All Phalanx systems procured with the fiscal year 1987 funds will be the improved block 1 configuration in response to the guidance we received from Congress last year.

I think it is important to note that the Navy is continuing its initiatives which lead to more weapons for the money. Our intention is to get the most out of every dollar Congress appropriates through rigorous oversight of budget execution, competition, and multiyear contracts. Let me discuss some examples.

WPN DUAL SOURCE PROCUREMENT

COMPETITION IN PROGRESS

TOMAHAWK
SPARROW
SIDEWINDER

COMPETITION PROJECTED

PHOENIX
MK-48 ADCAP
ASUW TORPEDO
MK-50 ALWT
RAM
STANDARD
VERTICAL LAUNCH ASROC

- BENEFITS:
  - BROADENED INDUSTRIAL BASE
  - ACCELERATED INVENTORY BUILD-UP
  - REDUCED UNIT COSTS
  - PROTECTION FROM CONTRACTOR PERFORMANCE PROBLEMS

Our fiscal year 1987 request emphasizes dual source procurement. As you know, we are already procuring Tomahawk, Sparrow, and Sidewinder through competition. This year's WPN request includes funds to initiate competitive dual source procurement of the advanced surface torpedo, the MK-50 advanced lightweight torpedo, and the vertical-launched ASROC. Additionally, funds are included to continue the competitive dual source process for Phoenix, the MK-48 advanced capability torpedo, the standard missile, and the rolling airframe missile, or RAM.

The benefits both financially and militarily are clear. The most significant are more rapid attainment of adequate inventories, broadening of our production base for these complex weapons, the potential for reducing unit cost, and the advantage of not having to rely on a single contractor.

MK-48 ADCAP HEAVYWEIGHT TORPEDO

PROCUREMENT PROFILE

	FY 86	FY 87	FY 88
QUANTITY	123	227	296
COST ($M)	$395.9	$508.4	$552.6

- HIGH SPEED, DEEP DIVING - CAPABLE AGAINST THREATS OF LATE 1980's AND 1990's
- IMPROVED PERFORMANCE IN ADVERSE ENVIRONMENTS
- MEETING OBJECTIVES OF STRENUOUS DEVELOPMENT PROGRAM
- COMPETITIVE DUAL SOURCE PROCUREMENT PLANNED

One of the dual source candidates of particular concern to this committee is the MK-48 advanced capability heavyweight torpedo. We plan to start full competitive procurement in fiscal year 1988. To achieve this goal, actual familiarization of two follower contractor candidates began in September 1985, and final selection will occur in March of this year. Our fiscal year 1986 budget included 12 qualification torpedoes for each second source. The contractor we select in March will procure 50 directed production torpedoes in fiscal year 1987 to be ready for competitive production in fiscal year 1988.

ASUW TORPEDO

PROCUREMENT PROFILE

	FY 86	FY 87	FY 88
QUANTITY	–	34	110
COST ($M)	–	$17.0	$30.9

- LOW COST SUBMARINE WEAPON FOR USE AGAINST SURFACE SHIPPING
- OFF-THE-SHELF TECHNOLOGY MINIMIZES DEVELOPMENTAL COSTS
- COMPETITIVE EVALUATION PROCESS WILL RESULT IN A SINGLE CONTRACTOR PRODUCING TORPEDO

While the MK-48 advanced capability torpedo and the MK-48 Mod 4 torpedo are designed for the dual role of antisubmarine and antisurface warfare, these torpedoes are more sophisticated than what is needed to use in quantity against non-ASW threat shipping. Accordingly, the Navy has decided to procure a low-cost, antisurface warfare, heavyweight torpedo to engage such targets. Our acquisition strategy plans the use of off-the-shelf technology with the cost of prototype development borne by the prospective contractors. The elements of that strategy are shown on the slide to your left.

Our fiscal year 1987 request includes funding for award of two competitive contracts, each of which will include procurement of 7 prototype units and full funding for 20 production units the following year. Evaluation of the initial prototype will enable us to select a contractor who will continue with fabrication and testing of 20 deliverables. This acquisition strategy is critical to support an fiscal year 1989 IOC. Follow-on procurement will be accomplished through a 3-year multiyear contract for fiscal years 1988 through 1990.

MK-46 MOD-5 NEARTIP
SURFACE/AIR LAUNCHED LIGHTWEIGHT TORPEDO

	PROCUREMENT PROFILE		
	FY 86	FY 87	FY 88
MK 46 MODS			
QUANTITY	500	500	500
COST ($M)	$118.9	$97.9	$87.7
MODIFICATIONS			
QUANTITY	672	672	319
COST ($M)	$81.0	$85.4	$54.5

- CAPABLE ANTISUBMARINE TORPEDO
- SECOND YEAR OF MULTIYEAR
- MODIFICATIONS PROGRAM FOR FY 87 AND 88 CONTINUE CONVERSION OF EARLY MK46 TORPEDOES TO NEARTIP STANDARD

Turning to our family of lightweight torpedoes, this year's request includes funding for the second year of the congressionally approved multiyear procurement of the MK-46 Mod 5 Neartip torpedo and the MK-46 modification program. Launched by both air and surface units the Neartip is the most capable torpedo which will remain an indispensable part of our inventory well into the 1990's. Funding for the MK-46 modification program allows us to convert MK-46 Mods 1 and 2 versions, the earlier versions of the torpedo, to the Neartip capability and improve our inventory status.

MK 50 ADVANCED LIGHTWEIGHT TORPEDO

PROCUREMENT PROFILE

	FY 86	FY 87	FY 88
QUANTITY	–	84	204
COST ($M)	–	$109.9	$346.9

- ENHANCED PERFORMANCE ANTI-SUBMARINE TORPEDO-CAPABLE AGAINST THREATS THROUGH THE YEAR 2000
- CARRIED BY AIR AND SURFACE PLATFORMS
- COMPETITIVE DUAL SOURCE PROCUREMENT PLANNED

Fiscal year 1987 contains our first request for procurement of the MK-50 advanced lightweight torpedo. The MK-50 provides our air and surface platforms a torpedo with enhanced performance and lethality. It is designed to counter all known and forecast submarine threats through the year 2000.

We plan to commence fully competitive procurement of the MK-50 in fiscal year 1990. To achieve this goal, funding was included in this year's request to commence the technology transfer efforts. In fiscal year 1988 the follower contractor will produce 100 torpedoes with which to qualify and be ready for competitive production in fiscal year 1990.

We believe the Navy's fiscal year 1987 WPN request for torpedoes, ASW systems and gun systems is balanced, affordable and properly constructed to meet the needs of the Navy and the Nation. Our overriding emphasis in this year's request is ordnance sustainability. We have funded the readiness account, torpedo support equipment and ASW range support at a level which will provide the fleet with training essential to tactical proficiency. Modernization funding is selectively targeted to our most pressing requirements: close-in air defense, antiterrorist security, and an expanding special warfare capability.

Congress has funded increased ordnance procurement in recent years. As the VuGraph we showed earlier displayed, as these weapons now deliver we are moving toward our sustainability and readiness objectives. This year's WPN request and the mix of weapons and support funding presented represent another step toward attaining these objectives by 1989. Your support of this year's budget, as in the past years, is crucial toward maintaining the momentum that we have established.

Thank you, Mr. Chairman.

[The statement of Admiral Ailes follows:]

PREPARED STATEMENT OF REAR ADM. ROBERT H. AILES

Mr. Chairman and distinguished members of the Subcommittee, it is my privilege to appear before you to present the munitions requirements for the U.S. Navy contained in the Weapons Procurement, Navy (WPN) appropriation Fiscal Year 1987 Budget Request and those items which require authorization in fiscal year 1988.

The overall fiscal year 1987 WPN request is for $6.095 billion. The growth over last year's appropriation of $5.228 billion results primarily from the initial procurement of the Trident II missile. As you are well aware, the Seapower Subcommittee exercises primary review authority over antisubmarine warfare and gun systems within the WPN appropriation. This year, that segment of the request is for $1.213 billion compared to $1.006 billion appropriated in fiscal year 1986. This growth rate continues the commitment to weapon procurement supported by this committee in previous years. Principal contributions to this growth in procurement are increased procurement of the MK 48 ADCAP torpedo and initial procurement of the MK 50 torpedo and Vertical Launched Asroc in this year's budget request. Figure 1 shows the fiscal funding trend for your Subcommittee's programs. This year's request reflects the Navy's continuing commitment to fund the procurement of munitions sufficient to meet its worldwide responsibilities and committments.

In recent years, Congress, and this Subcommittee in particular, have consistently shown a determination to fund a

FIGURE 1
SEAPOWER SUBCOMMITTEE FUNDING TREND
(BUDGET DOLLARS)

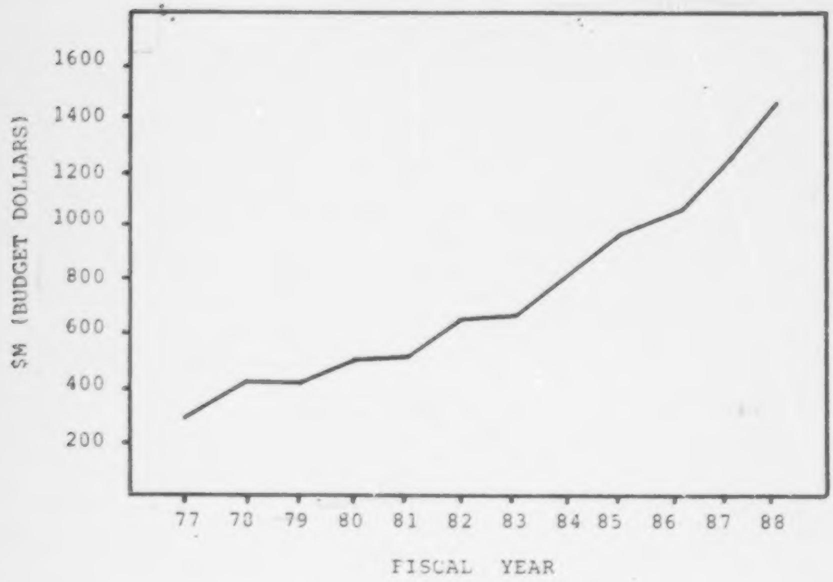
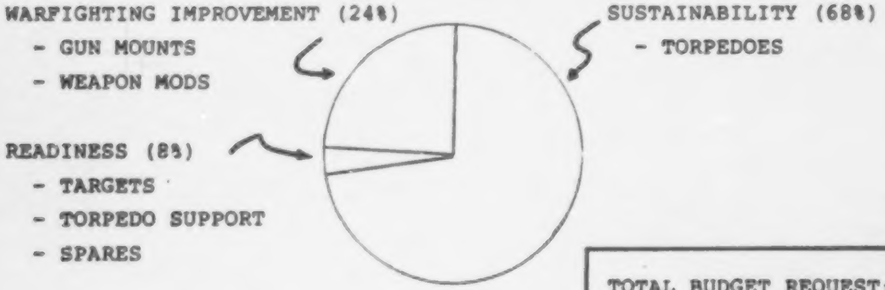


FIGURE 2
BALANCE OF SEAPOWER SUBCOMMITTEE FUNDING
FISCAL 1987 BUDGET REQUEST



TOTAL BUDGET REQUEST:
$1213 MILLION

steady increase in munitions inventories, with the goal of attaining objectives consistent with our warfighting needs. This determination is paying off. Crossdecking of ordnance has declined in fiscal year 1985 and will continue to do so as ordnance procured with fiscal year 1983 through 1986 funding is delivered to the fleet. Moreover, the expanded production rates have achieved reductions in unit costs of both missiles and torpedoes, reflecting efficiency achievable by contractors in ordering material and operating production facilities as well as reduced production costs from greater competition in procurement contracts.

The Navy's procurement policies continue our intent to get the most out of every dollar appropriated through extensive use of multiyear contracts, competition, and rigorous oversight of budget execution. This year's WPN request includes funds to: (1) initiate competitive dual source procurement of the MK 50 Advanced Lightweight torpedo, Vertical Launched Asroc (VLA) and the ASUW torpedo, (2) continue the competitive dual source procurement process for PHOENIX, the MK 48 ADCAP torpedo and both the medium range (MR) and extended range (ER) STANDARD Missile, and (3) initiate the multiyear procurement of the High Speed Anti-Radiation Missile (HARM).

The fiscal year 1987 Weapons Procurement, Navy Budget request consists of five Budget Activities, each containing similar line items. These are:

- Activity One, Ballistic Missile.
- Activity Two, Tactical Missiles.
- Activity Three, Torpedoes and Related Equipment.
- Activity Four, Gun Systems and Small Arms.
- Activity Five, Spares and Repair parts.

This structure reflects the change implemented in the Fiscal Year 1986 budget to enhance the management of spares procurement. Segregation of all spares has increased the visibility of related funding and procurement decisions. The result has improved our ability to monitor the requirement for spares during program development and better evaluate procurement of spares during budget reviews. The Navy appreciates the support of this Subcommittee in affecting this change.

Of immediate concern at this hearing is how the Navy intends to spend the money it is requesting to improve warfighting capabilities. The Navy characterizes its requirements for funding by balancing the supports required for the "Four Pillars" of Naval requirements. These four pillars are Force Structure, Warfighting Improvement, Readiness and Sustainability. The four pillars illustrate the balance between money for future capabilities (Force Structure, Warfighting Improvement) and for present capabilities (Readiness, Sustainability). The first pillar, Force Structure, refers to acquisition of ships and aircraft. While we don't procure these items in the WPN account, we pay close attention to the SCN and APN appropriations as we determine what and how many weapons are necessary.

WPN does fund a significant part of the Navy's second pillar, Warfighting Improvement. Warfighting Improvement is represented within WPN by the procurement of new gun mounts for existing ships and by funding of modifications to weapons already in our inventory. The third category, Readiness, includes training and the maintenance of equipment. In WPN, readiness funding procures anti-air and anti-submarine targets, weapons range services, rework of weapons used in training exercises and spare parts.

Sustainability, the final of our four pillars, is the principal component of the WPN appropriation. Sustainability procurement includes the acquisition of ordnance, war reserve supplies and procurement in support of the naval reserve. Of the Navy's overall budget, 10 percent goes for sustainability. Within WPN, sustainability procurement (missiles, torpedoes) accounts for 71 percent of the funding requested.

Figure 2 displays the balance between readiness, warfighting improvement and sustainability within the Seapower Subcommittee's sector of the WPN budget request. Warfighting improvement makes up 24 percent, readiness 8 percent and sustainability 68 percent. It is noteworthy that the warfighting improvement sector is significantly higher in the area of your concern than throughout the rest of the appropriation because the MK-15 PHALANX procurement program, the largest single warfighting improvement program in WPN, falls within your oversight.

This statement will concentrate primarily on Budget Activities III and IV, ASW weapons and gun systems. However, for your information, I have provided charts displaying the Navy's request for the items in Budget Activities I and II. Figure 3 through 6 deal with strategic and tactical missiles. Figures 7 and 8 provides information on readiness programs and Figures 9 and 10 lists warfighting improvement procurement.

Let's turn to the WPN items which the Seapower Subcommittee reviews and discuss the Navy's fiscal year 1987 request in terms of the Four Pillars.

SUSTAINABILITY PROCUREMENT

Figure 11 displays the Navy's request for torpedoes, other ASW systems and related weapons. The chart shows the fiscal 1987 budget request and authorization items for fiscal year 1988. For purposes of comparison, it also shows the quantities of weapons and funds appropriated in fiscal year 1986.

As displayed in Figure 11, this year's budget requests procurement of two, heavyweight torpedoes used by submarines and two lightweight antisubmarine torpedoes employed by surface combatants and aircraft. The decision to procure a second heavyweight torpedo results from tactical and cost tradeoff considerations while the lightweight torpedo procurement reflects the Navy's transition from the MK 46 to the MK 50 torpedo.

The Navy is continuing the process of introducing the submarine launched MK-48 Advanced Capability (ADCAP) heavyweight

Figure 3

ORDNANCE SUSTAINABILITY PROCUREMENT: BALLISTIC AND CRUISE MISSILES

	FY 1986		FY 1987		FY 1988		
WEAPON	QUANTITY	COST	QUANTITY	COST	QUANTITY	COST	NOTES
TRIDENT II	-	550.9	21	1424.4	66	2283.7	Increased payload and accuracy compared to TRIDENT I.
TOMAHAWK	249	724.8	324	790.5	410	908.1	Anti-ship (TASM) and Nuclear land attack (TLAM-N) versions operational. Conventional Land Attack (TLAM-C) under development. Launched from surface ships and submarines. TASM uses modified HARPOON guidance system. TLAM models use inertial and terrain matching guidance system. Competitive dual source procurement.
HARPOON	370	286.3	94	139.9	204	197.1	Ship, submarine, aircraft launched anti-ship cruise missile. Radar guidance system. Standoff land attack launched from aircraft.

Figure 4

ORDNANCE SUSTAINABILITY PROCUREMENT: AIR-TO-AIR MISSILES

WEAPON	FY 1986 QUANTITY	FY 1986 COST	FY 1987 QUANTITY	FY 1987 COST	FY 1988 QUANTITY	FY 1988 COST	NOTES
PHOENIX (AIM-54C)	265	348.8	205	317.7	430	440.9	All weather, long range Semi-active, mid-course guidance. Specifically designed for F-14. "C" version in production since 1980.
SPARROW (AIM-7M)	1948	340.7	1716	279.4	1594	271.6	Semi-active guidance medium range. Used by F-14, F/A-18. Modified version, RIM-7M, used by surface ships in NATO Sea Sparrow point defense system.
SIDEWINDER (AIM-9M)	2120	107.0	627	64.6	488	52.2	Short range. Infrared seeker. Used on all fighters and many attack aircraft. Latest version includes improved anti-countermeasures capability and enhanced capability against targets in "IR cluttered" background.

Figure 5

ORDNANCE SUSTAINABILITY PROCUREMENT: AIR-TO-GROUND MISSILES

WEAPON	FY 1986 QUANTITY	FY 1986 COST	FY 1987 QUANTITY	FY 1987 COST	FY 1988 QUANTITY	FY 1988 COST	NOTES
HARM (AGM-88A)	825	224.4	1110	256.7	1492	336.6	Succeeds Standard ARM and SHRIKE as primary anti-radiation, defense suppression missile. Increased velocity, greater range, improved sensitivity. Used by A-7E, F/A-18, A-6E aircraft.
SIDEARM	200	29.0	256	22.9	256	23.7	Short range anti-radiation missile. Converted from early SIDEWINDER missiles. Planned for MARINE CORPS AH-1 helicopters.
LASER MAVERICK	1500	164.9	1800	198.8	575	72.0	Semi-active laser guidance. Penetrating, blast-fragmentation warhead. Used for close air support, battlefield interdiction.
IIR MAVERICK (AGM-65F)	195	26.4	419	52.1	927	91.3	Infrared seeker, optimized for ship targets. Warhead and fuze same as LASER MAVERICK. Will be used by A-6, A-7, F/A-18, AV-8B.
HELLFIRE	1304	49.2	-	-	1824	62.5	Semi-active, laser guided anti-armor weapon for Marine Corps AH-IT/J helicopters. Procured through Army.

ORDNANCE SUSTAINABILITY PROCUREMENT: SURFACE-TO-AIR MISSILES

	FY 1986		FY 1987		FY 1988		
WEAPON	QUANTITY	COST	QUANTITY	COST	QUANTITY	COST	NOTES
SM-2 (MR) Block II	846	517.8	844	513.6	850	512.7	Medium range air defense weapon for TICONDEROGA class AEGIS cruisers, ARLEIGH BURKE class AEGIS destroyers, KIDD, CALIFORNIA, VIRGINIA classes with New Threat Upgrade (NTU) conversion, and OLIVER HAZARD PERRY class frigates with the SM-2 conversion.
SM-2 (ER) Block II	470	319.8	350	217.0	400	234.5	Extended range area defense weapon for LEAHY, BELKNAP, BAINBRIDGE, TRUXTUN, LONG BEACH class cruisers with NTU conversion.
RAM (Rolling Airframe Missile)	-	-	50	63.2	102	78.4	Provides close range anti-missile defense. Dual mode passive radar frequency/infrared guidance will equip variety of combatants, amphibious and auxiliary ships.
Stinger	-	-	685	51.9	-	-	Lightweight, shoulder fired infrared homing guided missile designed as protection against anti-terrorist threat aircraft.

FIGURE 7

READINESS PROCUREMENT: STRATEGIC MISSILE SUPPORT

PROGRAM	FY 1986	FY 1987	FY 1988	NOTES
TRIDENT I	34.4	4.7	10.3	Funding supports procurement of reentry body components, test instrumentation for flight testing of missiles and production support.
POSEIDON	4.8	4.0	3.4	Flight testing support, warhead components.

FIGURE 8

READINESS PROCUREMENT: OTHER MISSILE AND FLEET TRAINING SUPPORT

PROGRAM	FY 1986	FY 1987	FY 1988	NOTES
OTHER MISSILE SUPPORT	11.7	22.0	21.7	Funds maintenance support, test equipment for SUBROC ASW missile and missile launch-transportation canisters associated with Vertical Launch System and SM-1 Fleet Support.
AERIAL TARGETS	93.2	97.4	104.0	Procures powered, remote controlled targets and towed targets for air-craft and ship training. Also used in RDT&E.

FIGURE 9

WARFIGHTING IMPROVEMENT: SPACE SYSTEMS

PROGRAM	FY 1986	FY 1987	FY 1988	NOTES
Fleet Satellite Communications	53.1	65.1	118.3	Launch support for last of first generation satellites and long lead procurement for second generation communications satellites
Defense Meteorlogical Satellite	-	-	18.8	Funds Navy's share of components for DOD weather satellites system. Cooperative program with USAF.

FIGURE 10

WARFIGHTING IMPROVEMENT: MISSILE MODIFICATIONS AND INDUSTRIAL FACILITIES

PROGRAM	FY 1986	FY 1987	FY 1988	NOTES
Missile MODS	59.6	13.8	42.8	Procures components to upgrade performance of models and incorperate safety, maintainability, reliability improvements.
Weapons Industrial Facilities	23.7	7.5	10.3	Capital rehabilitation and emergency repair of real property and equipment at Navy owned Naval Industrial Reserve Plants (NIROPs).

FIGURE 11

ORDNANCE SUSTAINABILITY PROCUREMENT: TORPEDOES AND OTHER ASW WEAPONS

WEAPON	FY 1986 QUANTITY	FY 1986 COST	FY 1987 QUANTITY	FY 1987 COST	FY 1988 QUANTITY	FY 1988 COST	NOTES
MK-48 ADCAP	123	395.9	227	508.4	296	552.6	Most advanced sub-launched heavyweight torpedo. Capable against surface and submerged targets.
ASUW Torpedo	-	-	34	17.0	110	30.9	Low cost sub-launched anti-surface ship torpedo.
MK-46 NEARTIP	500	118.9	500	97.9	500	87.7	Current front-line lightweight ASW torpedo used by aircraft, helicopters, surface ships. Will remain in service through mid-90's.
MK-46 MODS	672	81.0	672	85.4	319	54.5	Commencing FY 1986, converts early models to NEARTIP configuration.
MK 50	-	-	84	109.9	204	346.9	Advanced lightweight ASW torpedo to be used by aircraft, helicopters and surface ships. Will meet current and forecast threats through the year 2000.
Vertical Launched Asroc	-	-	200	74.3	300	73.5	ASW standoff weapon capability for CG-47, DDG-51 and DD-963 with Vertical Launching Systems.
Swimmer Weapon System	-	1.5	-	3.9	-	1.5	Standoff weapon for use by Special Warfare Groups.

torpedoes as the front line replacement for the MK-48 Mod 4. The MK 48 ADCAP provides us a substantial improvement in capability over the MK 48 Mod 4. Changes in the guidance and control system improve the weapon's effectiveness against quiet submarines. Advanced technology will provide improved performance under ice, in shallow water, in high seas and in conditions of strong thermal gradients. Moreover, improvements in propulsion give us the speed and deep diving capability required to meet the current and developing threat. This torpedo will meet the challenge of the deep diving, high speed submarine through the 1990's and is essential to maintaining the tactical advantage for our attack submarine force. Dual source competition is included in the MK 48 ADCAP procurement strategy. Last year's budget included funding for production of 12 qualification units from the second source. Actual familiarization of two follower contractor candidates began in September 1985, and final selection of the second source will occur in March of this year. Our fiscal year 1987 request includes funding for the procurement of 50 directed pilot production torpedoes from the second source. Full competition will commence in fiscal year 1988.

While the MK 48 ADCAP and MK 48 Mod 4 are designed for the dual role of antisubmarine and antisurface warfare, these torpedoes are more sophisticated than what is needed to be used in quantity against non-ASW-threat shipping. Accordingly the Navy has decided to procure a low cost, antisurface warfare (ASUW), heavyweight torpedo to engage such targets. Our acquisition strategy plans the use of off-the-shelf technology with the costs of prototype development borne by the prospective contractors. Competitive procurement using fixed-price-type contracts will be structured to achieve the lowest realistic cost with the prime contractor candidates required to procure subsystems and components through competition at the subcontractor level.

The FY 1987 WPN funding profile provides for award of two competitive contracts, each of which will include procurement of 7 prototype units and full funding for 20 production units. Evaluation of the initial prototypes will enable us to select the contractor who will continue with fabrication and testing of 20 deliverables. This acquisition strategy is critical to support a FY 1989 IOC. Follow on procurement will be accomplished through a three year multi-year contract for fiscal years 1988-1990.

The fiscal year 1986 appropriation approved a second, three year multi-year procurement for the Navy's MK-46 torpedo and MK-46 torpedo modification program. The total procurement package consists of 1500 new MK 46 MOD 5 Neartip or Near Term Improvement torpedoes and 1663 conversion kits. Funding in this year's request procures 500 new NEARTIP torpedoes and 672 conversion kits. It is our projection that the approved multi-year procurement will result in a savings of $51.4 million compared to three annual buys of similiar size. Of equal importance, this level of procurement will provide an adequate lightweight torpedo inventory well into the 1990's and ensure the maintenance of a lightweight torpedo industrial base as we transition to production of the MK 50 torpedo.

Fiscal year 1987 contains our first request for procurement of the MK 50 torpedo. Exploiting new technology, the MK 50 provides a lightweight torpedo with enhanced performance and lethality for the air and surface ASW forces. It is designed to counter all known and forecast submarine threats through the year 2000. MK 50 torpedo procurement will include development of a qualified second source to be brought online for full competition in FY 1990. Specifically, fiscal year 1987 includes $10.6 milion while fiscal year 1988 will include $11.1 million for the second source qualification process, in particular engineering technology transfer efforts.

This year also contains our first request for procurement of the Vertical Launched Asroc (VLA). The VLA provides a standoff ASW weapon capability for our newer surface combatants, the CG-47, DDG-51 and DD-963 classes configured with Vertical Launching Systems. VLA is a rocket propelled ASW torpedo and will be configured for either the MK 46 or MK 50 torpedo as a payload, VLA will offer substantial increases in range and effectiveness over the earlier above-deck Asroc System. The program is structured toward early competition. Within our FY 1987 budget request, $20.9 million is required for the procurement of 60 VLA second source qualification missiles. This acquisition strategy will support full competition in FY 1989.

Summing up the systems we have discussed, the total of our sustainability request is $824.8 million.

READINESS PROCUREMENT

Realistic peacetime training is the sine quo non of successful combat readiness. Within WPN, readiness funding pays for targets used in fleet training, rework of weapons used in training and support costs for training ranges.

Figure 12 displays procurement plans for ASW targets. The WPN appropriation procures underwater targets which simulate threats for tracking and actual weapons firing. Some have extremely sophisticated capabilities. For example, the Mobile Target MK-30 used on instrumented ranges can simulate complex submarine maneuvers at speeds up to 30 knots. At the other end of the spectrum, the relatively inexpensive, expendable Mini-Mobile Target MK-38 is used in the open ocean to provide sonar training and weapons firing experience to antisubmarine surface ship crews. A follow-on version, the MK-39 Expendable Mobile ASW Training Target (EMATT) is currently under development. It will feature expanded operational capabilities and will be compatible with aircraft detection systems as well those installed aboard surface ships. We plan initial procurement of the MK-39 in fiscal year 1989. As can be seen, procurements funded through the FY 1986 appropriation provide a satisfactory inventory level among our underwater targets. Accordingly, additional procurements are not included in our FY 1987 request.

The Navy's request for ASW readiness support funding is shown in Figure 13. Most antisubmarine weapons used in training are recovered, as contrasted to missiles, which are expended in the course of firing exercises. The Torpedo Support Equipment funding

FIGURE 12

READINESS PROCUREMENT: ASW TARGETS

TARGET	FY 1986		FY 1987		FY 1988		NOTES
	QUANTITY	COST	QUANTITY	COST	QUANTITY	COST	
MK-38 MMT	1200	3.2	-	-	-	-	Mini Mobile Target Expendable ASW target for open ocean training of surface ships. Inventory supported final procurements in FY 1986.
MK-30 Mobile Target	6	17.7	-	-	12	39.4	Reusable, sophisticated target. Used for training and testing on instrumented ASW ranges.

FIGURE 13

READINESS PROCUREMENT: FLEET ASW SUPPORT

ITEM	FY 1986	FY 1987	FY 1988	NOTES
TORPEDO SUPPORT EQUIPMENT	44.8	32.5	36.1	Maintains warshot inventories in operational status. Funds components required to rework torpedoes after exercise firings.
ASW RANGE	22.0	20.1	23.2	Provides for support and maintenance of Navy's underwater ASW tracking ranges used for training and testing. Procures necessary equipment, production support services, and range proofing for new equipment.
ASROC	14.2	13.6	13.7	Replacement components for existing ASROC missiles, production support.

line procures components and supplies necessary to rework MK-46 and MK-48 torpedoes after training and test firings. The ASROC funding line replaces ASROC components expended in exercises. The amount of funding required in both lines is directly related to fleet training requirements. ASW Range Support funding provides training range devices and weapon proofing equipment used to support operations at the Navy's eight underwater ranges. A majority of the range support funding supports training exercises, with the balance dedicated to acceptance proofing of new and reworked weapons and test projects related to service weapons.

SPARES

Spares procurement is a vital element of weapons readiness. WPN spares and repair parts are in two categories. Initial and Replenishment spares are procured to support the operating forces and the industrial activities which repair weapons. The quantities of initial spares required is determined in proportion to the number of end items such as torpedoes and guns which are procured. Funding for replenishment spares is based on the number of weapon overhauls required and the historical failure rate of weapon components. As noted earlier, FY 1987 is the second year in which spares procurement has been segregated into a separate budget activity within the WPN appropriation. The result has been a distinct improvement in the management of spares procurement. Within the Seapower Subcommittee's area, the Navy's request for torpedo and gun spares funding is $45.2 million in fiscal year 1987 compared to $31.3 million in FY 1986. This growth reflects

37 percent after the adjustment for inflation. FY 1987's funding level, representing just 3 percent of the total request for all torpedo and gun system programs, provides the capability to maintain these weapons in the highest state of combat readiness.

Altogether, WPN ASW related readiness funding totals $98.7 million in fiscal year 1987.

WARFIGHTING IMPROVEMENT

Figure 14 displays the WPN line items related to warfighting improvement. As can be seen, funding for PHALANX Close In Weapon System (CIWS) and associated modifications accounts for over 51 percent of the $289.3 million which is considered warfighting improvement funding within the Seapower Subcommittee's area of concern. The remaining modernization dollars are requested for gun mounts, small arms programs, safety and operability improvements to gun systems and modifications to the MK-60 CAPTOR Mine.

This is the tenth year the PHALANX CIWS has been procured through the WPN account. The Navy plans to install a total of approximately 670 systems aboard ship, of which 389 will be procured with WPN funds. Our CIWS testing program, one of the most rigorous ever conducted by the Navy, has demonstrated that PHALANX is an effective system for terminal defense against low-flying anti-ship missiles or aircraft that penetrate fleet area defense. All PHALANX systems procured with fiscal year 1987 funds will be BLOCK 1 configuration, introduced into production in 1986. BLOCK 1 improvements include increased search elevation capability

FIGURE 14

WARFIGHTING IMPROVEMENT: GUN SYSTEMS, SMALL ARMS, MODIFICATION PROGRAMS

	FY 1986		FY 1987		FY 1988		
SYSTEM	QUANTITY	COST	QUANTITY	COST	QUANTITY	COST	NOTES
MK-15 CIWS	39	139.3	27	105.6	9	43.1	PHALANX Close In Weapon System. Fast reaction, autonomous, 20MM gun system for terminal defense against cruise missiles and aircraft.
MK-15 CIWS Modifications	-	29.9	-	43.0	-	54.7	BLOCK I modifications increase magazine capability and search evaluation angle to counter new threats. Other modifications enhance operability, maintainability and reliability.
MK-75/76MM Gun Mount	6	17.0	5	14.9	-	-	Procures guns for modernization of Coast Guard cutters and maintenance pool for Navy/Coast Guard ships.

FIG 14 (CONTINUED)

SYSTEM	FY 1986 QUANTITY	FY 1986 COST	FY 1987 QUANTITY	FY 1987 COST	FY 1988 QUANTITY	FY 1988 COST	NOTES
MK-19/40MM	56	1.1	25	.6	25	.6	Machine gun which fires 40MM grenades. For use by patrol boats, SPECWAR units, construction battalions.
25 MM Gun Mount	29	5.1	22	3.9	22	4.3	Army 25MM Bushmaster cannon on MK-88 Naval Mount. Replacement for 20MM gun on patrol boats, amphibious and auxiliary ships.
Gun MODS	-	19.1	-	14.3	-	13.3	Operability, reliability, safety modifications for 16 inch/50 CAL, 5 in/54 CAL, 40MM, 25MM guns.
Small Arms	-	10.8	-	10.1	-	10.7	Procurement and modernization of weapons 50 CAL and below.
CAPTOR MODS	-	14.9	-	11.6	-	12.3	Conversion of MOD 0 versions to improved capability MOD 1. Reliability upgrade for all MODS.

and expanded on-mount magazine capacity. The CIWS modification program request in the FY 1987 totals $43.0 million; $32.3 million will buy kits to backfit BLOCK 0 systems to BLOCK 1, $10.0 million is for modifications to enhance the reliability and maintainabilty of CIWS system, and $.7 million is for modifications to training devices.

Because of the increased air threat throughout the Middle East, the Navy has completed CIWS installation on each ship scheduled to mount CIWS prior to sailing for that region. By the end of 1986, a total of 39 deploying ships will have received accelerated installation of CIWS.

The MK-75 76MM gun mount is installed on new construction Navy FFG-7 class guided missile frigates, patrol combatant hydrofoils (PHM) and Coast Guard Bear Class cutters. It is being installed on Coast Guard HAMILTON class cutters as part of their mid-life modernization. In fiscal year 1987, one of the five gun mounts requested is for a Hamilton class cutter. The remaining four mounts will form part of a rotatable maintenance pool to support all ships armed with the MK-75. The maintenance concept for these ships is based on the periodic replacement of the gun mount on a six year cycle. The removed gun mount is then renovated at a shore facility and in its turn replaces another shipboard mount. This strategy is essential because the ships classes involved are maintained through short industrial availabilities which do not allow time for onboard overhaul of the gun during the availability.

Short range, high volume firepower is important to a variety of Navy ships, patrol craft, and shore units. The MK-19 MOD 3 40 MM machine gun and the MK 381 25MM gun described in Figure 14 satisfy this requirement. The MK-19 MOD 3 fires 40MM grenades to a maximum range of 2400 yards. It is an effective close range defensive weapon for auxiliary and amphibious ships, patrol craft, and construction battalions. The 25MM gun system will replace obsolete 20MM MK-16 guns as the main battery for 65 foot patrol boats and as general purpose short range armament for new construction amphibious and auxiliary ships. Both weapons are obtained through multiservice procurement programs with the Army.

The FY 1987 WPN funding request for Small Arms continues the Navy's emphasis on procurement of various weapons essential to base and ship protection in addition to outfitting our expanding special warfare forces. Of the $10.1 million requested in FY 1987 to procure a variety of machine guns, mortors, rifles and the 9 MM pistol, $9.6 million is earmarked for fleet support activities.

In his Fiscal Year 1987 Posture Statement, the Chief of Naval Operations used the term "violent peace" to categorize the current world political climate. Terrorists continue to expand their activities and have the potential to be felt almost anywhere with deadly force. As a consequence, the Navy has an expanding requirement to provide security for naval ships and installations both at home and abroad. The Navy's Special Warfare Forces, such as Seal Teams and Special Boat Units, have a range of capabilities which could be pivotal in either antiterrorist actions or rapidly developing contingency operations in support of U.S. interests.

The Gun Modification Program funds several types of actions: ordnance alterations (Ordalts) which provide hardware to correct safety and shock deficiencies, improve operability, reliability, maintainability, and system availability of all gun systems from the 16 inch/50 caliber down to the 20 MM gun. Alterations are developed in direct response to reports from the fleet.

Although procurement of new CAPTOR mines ended in fiscal year 1986, funding for CAPTOR modifications is requested in FY 1987 to support a continuing program of baseline MOD 0 CAPTOR conversions to the MOD 1 configuration. The MOD 1 configuration provides improved detection capabilities. In fiscal year 1987, the Navy request is for 102 kits at a cost of $11.6 million.

SUMMARY

We believe the navy's fiscal year 1987 WPN request for torpedoes, ASW systems and gun systems is balanced, affordable and so constructed as to meet the needs of the Navy and the nation. Our overriding emphasis in this year's WPN request is to achieve planned inventory goals as rapidly as possible consistent with overall fiscal realities. We have funded the readiness account -- torpedo support equipment, ASW range support -- at a level which will provide the fleet with the training essential to tactical proficiency. Modernization funding, the smallest sector within the total WPN appropriation is selectively targeted at our most pressing requirements -- close-in air defense, anti-terrorism security, and an expanded special warfare capability.

Within WPN we have pursued a policy of establishing second sources in each appropriate program. The benefits of competition, both financial and military, are clear. The SPARROW and SIDEWINDER programs are examples of our progress in using procurement competition to advantage. Competition within PHOENIX, MK-48 ADCAP, MK-50 Advanced Lightweight torpedo, ASUW torpedo, STANDARD missile, RAM and Vertical Launched ASROC are expected to add to the Navy's ongoing success story.

Ordnance and support material procured by the WPN appropriation provides the key to the fleet's ability to carry out prompt sustained combat operations at sea in support of the national interest. Your support of this year's budget will enable us to continue the steady progress toward full readiness and sustainability which has marked the preceding years of this decade.

Mr. BENNETT. I will call on members, going through the list again, starting with Mr. Sisisky. But before I do that I would like to ask you if my feeling about this is accurate, in saying that this committee not only has helped the Navy to go forward to a 600-ship Navy, but also, in view of what you just reported to us, doing fairly well with regard to conventional weapons in the procurement process. In other words, the graphs look optimistic. Am I wrong in that assumption?

I would kind of hope that one branch of our services was making some advances in this way. Apparently, from the graphs you have given us, we are in fact doing that; is that correct?

Admiral AILES. I think without reservation, Mr. Chairman, I think the support of this committee has been crucial to that effort and has been a large part of the success of our ability to sustain that effort and the funding efforts that we——

Mr. BENNETT. Well, I appreciate that, but I really wasn't looking for a compliment. I was really looking for the fact you know, in the media we are always looking at things that are negative, and as something negative comes up it makes a headline. But it is pretty affirmative we are really on the brink at least of a 600-ship Navy, and now I realize from what you have presented that the graphs show that we are also doing well in the area of procurement of weapons. Maybe not as well as you would like to, but it is a very impressive figure.

So I really was not looking to put the compliment on this committee so much as I was trying to look at don't we, in fact, or do we, in fact, have a reason to be happy about the defense structure of the Navy at this point, particularly in view of what you have said here today?

Admiral AILES. I think I would echo your words, sir. We have had 4 years of solid progress toward building up our sustainability. While there is still more ground to go, I think the progress speaks for itself, sir.

Mr. BENNETT. I think it is an important statement to make because it is so easy for everybody to look at the negative things. In fact, I have heard some people say, well, the Navy has achieved these things in this period of time and therefore it has gotten more than its desserts and therefore we ought to cut back on the Navy. But this was a goal and we are achieving that goal, and I see no reason to say when you are achieving a goal that you ought to condemn yourself for having achieved it. So I think our Government as a whole, including the President and the Congress and the Navy, ought to be congratulated on the fact that there is a goal which we set out to do and we are in the process at least of achieving it.

Mr. Sisisky.

Mr. SISISKY. I thank the chairman, and I would hope that the chairman's knee will be all right. I think the record ought to show that the chairman entered this committee meeting in a wheelchair after a stay in the hospital. I think you probably got out this morning, didn't you, or yesterday? I think it is superlative that he would be dedicated to his job like that.

Mr. BENNETT. Thank you.

Mr. SISISKY. Admiral Ailes, I have some questions about your overall procurement plan for heavyweight torpedoes. In 1987, you propose to buy MK-48 ADCAP torpedoes and new, low-cost torpedoes for use against surface targets. No. 1, why can't the more than 2,000 older MK-48 torpedoes be used against surface targets? No. 2, can we really afford to buy enough MK-48 ADCAP's to justify funding the development of a second source while at the same time buying the new, low-cost torpedoes?

Admiral AILES. Well, if I understand your question, our feeling is that the existing torpedoes, the MK-48 Mod 4's, are capable against the submarine threat of today but will be outclassed by the threat of the future. They certainly can be used against the surface targets of today, and we certainly will continue to use them. At the present time our buildup rate of the advanced capability torpedo will be relatively slow and we will want to maintain our current inventory for the kind of targets it has been designed for, the submarine targets. So at the same time we feel it is quite possible to, at a fairly low cost, about $200,000 per round, develop this antisurface weapon using basically existing technology, build a population of those, somewhat over a thousand, and then put those on the shelf as a reserve for that need should it arise.

We think it is affordable. It is a tough call and I can understand the question. But we think it is a way to take advantage of the kind of technology that is here for us today and be able to field such a population and have that capability should we need it.

Mr. SISISKY. Well, I think you basically answered the question. Because you know what would happen dollarwise and to our forces if these programs were delayed a year because of fiscal constraints.

You know we have to find ways to cut this, and I think you answered the question, that this is certainly one area that perhaps could be cut.

I do worry about it, and I know we have to do more than sole source by law now. As I understand it, it is going to cost some $11 million, is that correct, to start the second source for the MK-48?

Admiral AILES. I am afraid I don't have the figures right at the tip of my tongue.

Mr. SISISKY. Excuse me. The MK-50 torpedo.

Admiral AILES. I don't have the specific figures, but that sounds roughly right, sir.

Mr. SISISKY. Is it Navy policy to pay for second sources?

Admiral AILES. No, sir. We do not pay for the facilitization of the second source. We pay for a small part of the second sourcing associated with those test equipments which are unique to Navy tests that we require for the system. So the bulk of second source funding is paid for by the contractor. We have not found a reluctance of the contractor to get involved with this, although there is a certain——

Mr. SISISKY. What is the $11 million for then, do you know? Is that the full cost for qualifying a second source for the torpedo?

Admiral AILES. I am afraid I don't have the details right in front of me. I would estimate that the $11 million is for the unique Navy test equipment and such tests that we have to conduct of the second source weapon, sir, but I will have to get you a more——

Mr. SISISKY. Let me just ask a question, either to Admiral Smith or Admiral Ailes. As it pertains to procurement, this is a budget item, whether it be $1 billion or $500 million, we authorize and let's say the other committee appropriates. Admiral Smith, you talked about a line-by-line item review, that you checked that.

Admiral SMITH. Yes, sir.

Mr. SISISKY. In the real world, is that what happens? Are our prices to what this budget calls for? In other words, if it calls for a $2,000 piece of ordnance, is that what it is in the contractual world, or do we have the surplus built into that and reprogram? You brought up reprogramming. What is the real story here? Because we had a different set of circumstances this year than we have ever had, and I am trying in my mind and through a little research done outside of here to find out what is the true budget item.

Admiral SMITH. Yes, sir. Let us say that in fiscal year 1986 we bought 200 torpedoes. We signed a contract. What we do in the 1987 budget, through the process of reviewing every subset of that torpedo's line item in the 1987 budget, is we go to the 1986 contract and based on the price we last paid for that piece of equipment, and that becomes the price in the 1987 budget modified only for escalation using the entire Federal Government's escalation indicator. We do that whether we are buying a ship, whether we are buying an airplane, or a missile, or whether we are buying something as mundane as an HF radio.

Mr. SISISKY. Excuse me. No matter what the volume is?

Admiral SMITH. The last known price as a function of volume. In this example, to make it simple, we bought 200 and we are going to buy 200 more, but there are curves, there are tables available that say there is this much of a saving if you buy 10 percent more or if you buy 20 percent. So we make those mathematical corrections. I have a budget analyst that monitors each one of the 330 OPN items, for example, and that is one of the first, very basic steps they do when they look at the budget that comes from the warfare sponsor for that particular piece of equipment.

Now there are other parts of that. There is testing of the component, the torpedo in this case, at the factory before it is delivered to the Navy. There are those certification tests. Then there is an additional bill for the delivery. Sometimes these are either add-ons to the contract or they are separate contracts.

But essentially what we do is we take the current price, escalate it, and that is the number that goes in the budget. The reason that is the number that goes in the budget is that, if our guy tried to pad it a little bit—we are looking for money to buy things with—that our total value wouldn't allow it. So it is my staff's job and my job to go find those places where we think they have tried to give themselves a little flexibility and take it out, because if we don't do it, the Secretary of Defense's staff has the same charter.

We pride ourselves professionally on looking at every one of those items so that we can make that determination. The uncertainty that arises is what will the final contract price be. Whether it is an airplane, a ship, a missile, or this torpedo we are talking about, we don't know until we execute that contract. The manufacturer doesn't know because he doesn't know what his market is going to be at the time he sits down at the table to negotiate with us.

So in the current environment of the last several years, because of inflation being in somewhat of a decrease, we have generally seen a saving. Now what we often do with that saving is we may expand our test equipment buy. Maybe we need six pieces but we can only afford five. Now that we have made a saving in the basic contract we will buy that sixth piece with that saving, and then my budget guys will take it out of the next year's budget. It won't appear there because we again want to efficiently use that money to buy, maybe it is really more torpedoes.

Mr. SISISKY. Well, let me get down to the very basics.

Admiral AILES. Yes, sir.

Mr. SISISKY. If you have got $1.1 billion in ordnance in the 1985 budget, what do you really spend for that ordnance line by line?

Admiral AILES. What do we really spend?

Mr. SISISKY. Yes.

Admiral AILES. We may spend $1 billion in the first couple of years. But you see some of those contracts do not close as long as that weapons system is in use by the Government, by the Navy. They don't close because there is a warranty clause, or there is an update clause that says this contract requires the contractor to provide spare parts or technical manuals. So there is a piece of that contract left open. And as long as there is a piece left open, the budgeting/accounting process allows the use of some of that initially appropriated/authorized money to be used against that line maybe 5 years later. So that today we are buying technical manuals and support equipments for a ship that may have been commissioned 4 years ago.

Mr. SISISKY. Mr. Chairman, I know I have spent more than my time. I may come back.

Mr. BENNETT. All right. Mr. Spence.

Mr. SPENCE. Let me yield my time to Mr. Hartnett.

Mr. HARTNETT. Oh, bless your heart, Mr. Spence. Thank you so much.

Admiral, I want to play my broken record part. You know I have tried to review—and I am addressing these remarks to Admiral Ailes—your remarks here comprising about 27 pages. First of all, let me throw a bouquet, and tell you how proud I am to see that you have used both sides of a piece of paper. I am serious. Under Gramm-Rudman they would be proud of you. Real proud of you.

But the entire portion of your presentation, your prepared presentation and your verbal presentation, that I can see that made reference to mines comprises one paragraph on the last page, where you talked about mine warfare.

Admiral, I know that rear admirals are a lot like Congressmen. They come and they go, and they are here today and they are gone tomorrow, and nobody listens to us. I am just wondering if anybody in the Department of the Navy can get the Chief of Naval Operations or the Secretary of the Navy's ear to remind them that in the last four decades or more the most recent naval operations that were successful, be it in the closing days of World War II when we mined Japanese harbors and sunk 515 ships or whether it be in Korea where, as the article that I showed you in that Seapower magazine, with a bunch of junks and sampans, the Koreans laid 4,000 Soviet mines and kept a fleet of 250 ships at bay for well over 1 week. I think even in the Falklands a ship was sunk with a mine. I know one was sunk with a missile, but I think with a mine also. I think we had some problems over in the oil regions of this world; we had to call upon the French to pick up mines that were laid there so oil tankers could get through.

For a torpedo to be lethal or effective, you depend upon a ship, a submarine, or an airplane. You have to physically engage the enemy. You have to have control of the airspace if you are going to launch torpedoes by aircraft. If you are going to launch them by surface vessel or submarine, you have to physically engage the enemy, put your ships, your submarines, or your forces in some type of danger. You have to spend lots and lots of money, but with simple mines you can put them there. I guess you can activate them at will, some of them, really. You don't have to activate them upon their being placed there. I am certain we could develop one that you could. You don't have to feed them. You don't have to fuel them. You don't have to vacation them or sick bay them. You don't have to give them retirement pay or cost-of-living increases when they retire. You don't have to do anything.

And all of the naval operations since the closing days of World War II that have really been successful have involved mines. And yet and still somebody, somewhere, at the Pentagon, who could influence Navy thinking in this regard time and time again refers one paragraph in 26 pages to what in my way of thinking is the most cost-effective force multiplier ever invented by naval experts. Time and time again; 1,000 ships sunk by British forces; 1,000 ships in World War II. All the torpedoes ever made never sunk 1,000 ships in World War II, I doubt. But yet and still time and time again we walk away from and turn our backs on torpedoes that can be stored on shelves, activated when needed.

And might you tell me whose thinking it is that you would attribute the Navy's reluctance to? If it is the Secretary of the Navy, someone is influencing him. Who might that be? That before I leave here I might at least send a piece of correspondence to him urging him to reconsider before they become retired.

I beg your pardon.

Mr. SISISKY. I have replaced you. I have been sending the signals.

Mr. HARTNETT. Yes; I think the good Congressman from Virginia has outstandingly assumed my somewhat very ineffective role as spokesman for mine warfare.

One other closing note, Admiral, and this is a long question; I can't even remember what it was. If there are in fact manufacturers of mines in this country, and if you have to gear up to manufacture them, what, with the low amount of mines we have been ordering here lately they are liable to close their store, and then where might we get mines, and research, and development into mine warfare to stay current?

I think the question I would like to ask you is what is your opinion of mines as an effective force multiplier? And two, to whom individually—if you can say this, and I encourage you to do it—to whom, besides the Secretary of the Navy, might we attribute the Navy's reluctance to move forward with the development of mines and the appropriations, or the request for appropriations for mines?

Admiral AILES. I am not the Navy's expert on mine warfare, but I certainly think I can answer to two things. One, I think we are making progress in mine warfare that is very encouraging, similar to the progress that we are making in sustainability.

Mr. HARTNETT. That is a broad statement. Would you tell me and delineate for me and this committee some of the progress that you think we are making? I mean it is easy to say that, but tell me what you think is the progress.

Admiral AILES. We are, as you know, developing two classes of mine warfare ships to replace older ships which are largely ineffective. We have developed several mines and are continuing to work in that area—in mine warfare. We are improving our ability to integrate the Reserves into our mine warfare business and use crafts of opportunity as harbor-clearing devices, and solve basically two problems for us: having to maintain a large standing fleet that we really didn't need except at specific times. Now we can accomplish that by just using inventories of ships that would reasonably be there. I think that is encouraging.

We are continuing through our laboratory down at Panama City, as I think you know, to maintain our proficiency in the mine warfare business. Our research, and development, and so forth. We have done that throughout the years, and I think we are continuing that.

I can share your frustration. Are we going fast enough, and are we catching up, and obtaining the capability that we genuinely need? I think there is reason for disagreement among people and differences of views. And you obviously have yours, sir. I can't argue with that.

My background is not strong in mine warfare. I must admit that in the naval exercises and operations in which I have served where mine warfare has been a part of it, it has been a difficult part of it.

Mr. HARTNETT. Isn't this procurement that we are talking about today, though, Admiral?

Admiral AILES. Pardon, sir?

Mr. HARTNETT. Isn't this procurement that we are talking about today, a request for authorization for procurement?

Admiral AILES. In my account, I am only currently to your face, to your side, I am not procuring any mines this year——

Mr. HARTNETT. Presumably that is what this hearing is all about. Well, let me just respond by saying this, Admiral. I don't think that you would consider a tramp freighter that could be retrofitted with a 5-inch gun and perhaps some missile launchers as an effective combatant in the event that we went to war. And I don't consider a 44-foot Morgan Out Island sailboat a craft of opportunity, an effective minesweeper. You say we are integrating the Reserve Forces, yet and still the entire U.S. Navy is made up of three active duty minesweepers, some dating back to World War II.

Admiral AILES. Yes, sir; and that is inadequate. I can't argue with that.

Mr. HARTNETT. And so with all the Reserve Forces in the world, I mean, you know, we will sink these little ships with 300 men on these little 100-foot ships. So to say we are integrating the Reserve Forces into our mine forces and then only have three ships, we may well have a very small Reserve Force.

And you spoke about the ships that we are developing, yet time and time again we move them further to the right. Further, and further, and further, and further to the right. So to have them on the drawing board really doesn't increase our offensive or defensive mine capability. So although the thinking is there among a very small group of people, I think you and I will have to agree that the Navy has made very little tangible progress in the way of offensive or defensive mine capabilities.

And now the last part of my question, to whom would you attribute that advice and that thinking at the Department of the Navy? I mean, who is the man or woman, or men and women, who advise the Secretary of the Navy, who ultimately advises the CNO, or who advises the other way around, and then come to the Congress and say: "Say, guys, we need some mines and some mine ships?" Who would that person be? Mr. Pyatt? The Secretary of the Navy?

Admiral AILES. The Secretary of the Navy is certainly the most influential person in that matter.

My previous tour I worked with the Director of Naval Warfare, and each year we worked very hard on a mine warfare assessment that basically laid out the problems that we saw in mine warfare and the programs that we needed to pursue. We certainly are aggressively trying to assess our problems and get on with it.

I have to share your frustration, though, that our physical evidence hasn't been as good as many would like, including many within the Navy who are experienced with the problem. It is again one of these hard choices that you understand we are making, and probably time will prove one of the two of us wrong.

Mr. HARTNETT. I don't want to take any more of your time, Admiral. I appreciate your frankness. But again, my only point is we are talking about new torpedoes. To start with, they have to be fast enough to catch Soviet submarines, and I understand that is pretty difficult to do today. What with the new material and all that is being used in Soviet submarines may even make it less effective, the torpedoes, and that is why we have to keep—but we still have to either control the airspace or physically engage the enemy for a torpedo to be effective. And with a mine, that isn't the case.

And that is why I can't understand the Navy's reluctance. And as you say, you appreciate my frustration. And I encourage my very able chairman, although he is on one leg now, to continue his fight for many things among which I hope will be a better mine capability on behalf of our U.S. Navy, Mr. Chairman.

Thank you, Admiral.

Mr. BENNETT. Will the gentleman yield at that point?

Mr. HARTNETT. Yes, sir.

Mr. BENNETT. I think the gentleman from South Carolina has made a tremendous contribution in this area. And I would hope that he might consider presenting to this subcommittee some sort of an addition to this bill. I realize it is hard to get any additions, but it could be a symbolic thing. Like last year the gentleman from South Carolina and others joined me in an amendment to the authorization bill to add I believe it was $1 billion, which is more than we are going to get for these mines. But anyway, for starting up an effort to be sure that we are able to handle conventional warfare.

Now it is sort of a symbolic thing; $1 billion doesn't meet the need, but it is in the direction. And therefore, if the gentleman from South Carolina might draft an amendment which could address some of these problems about mine warfare, even if it was just symbolic, he could have some introductory language to it and point out the need to be in this.

Now one thing that occurs to me is the fact that you are having this homeporting thing. I mean you are having different homeports, or new homeports. It seems to me that mine warfare should have a part to play in protecting these ports, if it is so important not to put all our eggs in one basket, and move them around at great expense, and costing billions of bucks. I mean we may say it is not going to cost that. Well, you and I know it is because they are going to duplicate everything in these places. Ultimately they will duplicate everything because they won't be able to give the justification of not duplicating. So they will eventually have the chapels, bowling alleys, swimming pools—have all these sort of things in addition to all these new homeports. So it is going to be an expensive thing.

And I think to leave out of that picture some effort toward mine warfare is a mistake. I would encourage the gentleman from South Carolina to get up an amendment, after talking to whoever you want to—Mr. Cavaiola, or Mr. Schafer, or somebody—to try to get up some language that would be an ideological thrust in the direction of mine warfare, and maybe we can find something to cut out of the existing bill.

But I share with you your feeling about this. And I think if we let you leave and go back to South Carolina, which you plan to do, without giving you some concrete feeling of success in this, I, myself, will be disappointed. And I think the rest of the committee would, too, because I think you are on sound ground.

So I would just suggest that a modest amendment, but one which is ideologically pointing in the direction toward mine warfare, would be something that we probably could absorb even in these very difficult days. I urge you to do that.

Mr. HARTNETT. Well, spurred on by my very capable chairman's enthusiasm and encouragement I will draw a very modest amendment and submit it to my chairman for his consideration. And I thank him so much for his kind words and for his encouragement. I will do just that, Mr. Chairman.

Thank you, Admiral.

Mr. BENNETT. Mr. Carney. Mr. Bateman.

Mr. BATEMAN. No questions, Mr. Chairman.

Mr. BENNETT. Mr. Dyson.

Mr. DYSON. Thank you, Mr. Chairman.

I have a more general question. I think, Admiral, you are to be commended. I was reading on page 3 of your prepared statement talking about the kinds of cost savings by the Navy under that part of the Navy budget that you have. It talked about expanded production rates which have achieved reductions in unit costs of missiles, torpedoes; efficiencies that you have achieved by contractors ordering materials, operating production facilities, as well as reduced production costs from greater competition. You go on to say that you are getting the most out of every dollar appropriated because of multiyear contracts, competition, rigorous oversight of budgets.

Will that bring about a savings, enough of a savings that you can live with a freeze? I see your budget says that overall for fiscal year 1987, your WPN request represents a 17-percent increase over last year's appropriation. My friend, Dr. Cavaiola, and I have been sitting here sort of calculating what the various agencies within the Defense Department would have to come up with if Gramm-Rudman should go into effect. Nowhere is there a 17-percent increase envisioned.

I guess what I am asking you is do you have another budget?

Admiral AILES. No, sir; I do not have another budget. What generally happens, as you know, is that if we have to reduce our funding we will probably reduce some of the sustainability that we buy, whether it be through reduced quantities in a particular——

Mr. DYSON. Well, that sounds like another budget.

Admiral AILES. But I have no such budget. We think the budget that we have is a sustainable budget. We have made it, as I indicated earlier, a bigger part of the Navy budget because we thought the need was there to devote more of our resources to sustainability.

Mr. DYSON. I don't want you to misunderstand me. Obviously, I have been on this committee a while, and you gave us all a number of accolades for supporting these increases. Obviously I was here, so I supported those increases and I would like to see that happen.

We are under, as you know, a schedule that requires us about 1 month from today to come up with an authorization. If, as our chairman of the full committee, Mr. Aspin, has said many, many times that under this Gramm-Rudman scenario it certainly could be in the interest of those who do not wish to see the domestic side of the budget cut any more or cut in the fashion that the President's budget would envision, they may sit on their hands and let Gramm-Rudman go through. Let the Gramm-Rudman triggering mechanism go through. And then, as you know, Defense gets about half of the cuts. That is really serious business. I think it is very serious business.

I am just wondering if you are prepared to have that happen. See, I read from page 3 of your proposal, and then I go back on page 1 where I see that—in your own words—this budget proposal that you have represents a 17-percent increase over last year's. There is just no way I can see that that is going to happen. I just can't under any kind of scenario. And I am wondering if you have some alternatives.

And I guess I would further that by saying that it sure would help us, if you would prioritize some of these requests that you have.

Admiral AILES. Well, as you know, I am not at liberty to do that. But it would probably necessitate reducing quantities as I have indicated in some of our procurements, and perhaps losing some of the efficiencies that we are currently achieving. We, basically, carved that out of the Navy budget by, as I said, by giving up other accounts, reducing some of the other accounts, to try to keep our sustainability and our momentum in this particular program moving.

It also occurs this year, largely contributing to that 17 percent that you were discussing, that this is the year that we are trying to go into a larger procurement of the Trident II missiles, and that really basically oversteps the rest of the account. Were I to pull that back, then the account would look very similar to the OPN account that Admiral Smith presented. There would be very little growth between 1986 and 1987, sir.

Mr. DYSON. Well, I think you have sort of answered my question. That if it was placed upon you that probably cutting the quantities would be the way to do it.

Admiral AILES. Yes, sir; reluctantly, of course.

Mr. DYSON. All right. Please understand I am just as reluctant, but we may be faced with that. Thank you, Admiral.

Mr. BENNETT. Any more questions?

We will convene tomorrow at 9 o'clock in a joint meeting with the Readiness Subcommittee.

We deeply appreciate your presentation. It was very good. Thank you.

Admiral SMITH. Thank you for your courtesy, Mr. Chairman.

Admiral AILES. Thank you, sir.

Mr. BENNETT. We will adjourn until 9 o'clock tomorrow.

[Whereupon, at 3:12 p.m., the subcommittee was recessed, to reconvene at 9 a.m., Wednesday, February 26, 1986.]

ASW MASTER PLAN BRIEF

House of Representatives,
Committee on Armed Services,
Seapower and Strategic and
Critical Materials Subcommittee,
Washington, DC, Friday, February 28, 1986.

The subcommittee met, pursuant to call, at 9 a.m., in room 2212, Rayburn House Office Building, Hon. Charles E. Bennett (chairman of the subcommittee) presiding.

STATEMENT OF HON. CHARLES E. BENNETT, A REPRESENTATIVE FROM FLORIDA, CHAIRMAN, SEAPOWER AND STRATEGIC AND CRITICAL MATERIALS SUBCOMMITTEE

Mr. **Bennett**. The committee will come to order.

Today the subcommittee meets in closed session to receive a briefing on the Navy's master plan for antisubmarine warfare.

As most of you know, in addition to responsibilities for procurement of naval vessels and weapons, the committee rules also give the Seapower Subcommittee legislative jurisdiction over the area of antisubmarine warfare. This kind of assignment is unique among the responsibilities of the various subcommittees.

I have an intense interest in this because these people are dedicated to protecting our country in this particular ever-changing, ever-challenging endeavor.

Providing today's briefing is Rear Adm. Dan Wolkensdorfer, director of the ASW Division of the Office of Naval Warfare.

STATEMENT OF REAR ADM. DANIEL S. WOLKENSDORFER, DIRECTOR, ASW DIVISION OF THE OFFICE OF NAVAL WARFARE

Admiral **Wolkensdorfer**. It is a pleasure to be here today.

This is an informational briefing discussing the ASW challenge as we see it from the Soviet Union submarine force improving. We will talk about the master plan development underway to counter that submarine force; 1984 should be viewed as a major turning point in antisubmarine warfare in the U.S. Navy. Throughout the year, a series of major ASW studies confirmed a disturbing [deleted]. Successful execution of our maritime strategy is dependent upon our qualitative advantage and any [deleted].

FUNDAMENTAL CONCERNS

These are the fundamental concerns that we have. First of all, Soviet tactical deployment trends have become more aggressive in the past few years. It used to be if you wanted to find a Soviet submarine shadowing the battle forces, you could [deleted] you would find the submarine. However, now that is not true. [Deleted.]

The Soviet forward strategy potential is evidenced by their analogous response, recalling that Andropov increased the Soviet submarine presence off our coast. They have essentially maintained that presence and are likely to continue to do so for the future.

Soviet weapon improvements trends are becoming more evident across the war-fighting spectrum. On the submarine side, within the last 5 years we have seen a new construction-type submarine for each class of submarines that the Soviets have. Systematic [deleted] is the big driver in the equation.

The new submarines that we see are significantly quieter than the older submarines, and we also see as the older submarines go back for rework, that they are becoming quieter as well. This results in net decline in the U.S. systems vis-a-vis the Soviet Union. [Deleted.]

There is uncertainty in actual war-fighting capability on both the Soviet Union side and ours as we become more complex, more technologically sophisticated; we have to bound that with a little wider margin of uncertainty perhaps, than we have done before.

Admiral Watkins, in looking at this, made this statement in September 1984 when he directed a [deleted] addressing that [deleted] must be taken in the near term to [deleted].

Mr. **Bennett**. Did anybody ever study to see whether the spy in the Navy, whether his material, since he was in the sub area, was any help to them as far as quieting is concerned?

That would be a fairly dramatic thing to do, assuming he has his penalty, but if anybody had studied it, if it is true, I think it would be a further worry for spies to concretely see what they did that is going to endanger our men.

You may not know this now, but what I am thinking about, if you don't want to expose it—and I am not asking you to expose it—but I think if it is true that there is a reasonable guess that the things that he could have turned over, because of these particular assignments, might have helped the Russians have quieter submarines, I think saying that might be a good thing to say, because I think spies must think a little bit how they hurt people.

You might look into that and let me know later. It may be the policy not to say anything further about it. But I wouldn't want to prejudice his suit. I think he should be tried without the melodrama, but the melodrama might help present spies from doing things like this when it is endangering guys, not just the Government.

Admiral **Wolkensdorfer**. I understand. We will take that back.

DESCRIPTION OF THREAT

With this in mind, I would like to take you through a description of the threat, both in terms of quantity but primarily of quality. I'll show you that we must transition from our dependence on the [deleted] that we have done so well with up until now into new types of exploitable phenomenon.

I will talk about the planning process to ensure that transition is successful, and the war-fighting strategy, which is the basis of our planning process. This is something we have not done before in great detail.

Finally, I will summarize with the requirements that we will have to fulfill in order to execute this transition.

First of all, looking at the Soviet submarine force from the present time out for 20 years, we see that in 1986 they have approximately 363 submarines, of which 75 are nuclear-powered ballistic missile submarines, 60 nuclear-powered cruise missile submarines, primarily antiship, 80 of these are nuclear-powered attack submarines and 133 conventional subs of several varieties.

The have [deleted] totaling [deleted] these include [deleted] type submarines and [deleted]. We don't see a large change in the number of submarines as we go out to the 20-year period. We do see an introduction of the strategic SSGN or cruise missile submarines.

We also see more of a shift toward nuclear-attack submarines replacing some of the older conventional submarines. Perhaps more significantly, if we look at that force again over time and recognizing that 1984 is somewhat of a turning point in new construction submarines for the Soviet Union, if you look at the year [deleted] roughly [deleted] of these will be of the newer variety. So they are moving very, very rapidly. If they continue to construct submarines the way they have, they are moving rapidly toward a capable and modern force.

This [deleted] shows the reduction in noise levels. If I may, before I start this, I would like to talk about how we [deleted]. We do it in two ways:

The best analogy is to equate it to a freight train. A freight train makes a lot of noise which is a broad, diffuse background. Additionally, you have a whistle which punctuates the noise. In our nomenclature, we would call the whistle narrow band information, whereas all the background noise associated with the train and the moving parts is broad band.

The very good thing about [deleted] is that you can [deleted]. A whistle is easily understood and identifiable, whereas background noise is not so easily identifiable because trucks make the same noise. It is the same thing in the ocean because you get the same type of interference from surface ships and oil-drilling rigs, for example. In the [deleted].

You can see what is happening to us in the slide showing noise levels versus acoustic frequency. This is what we were working with up until the recent year or two.

This is a *Victor I* class submarine introduced about the 1970 timeframe. This goes up to [deleted] and we [deleted].

The *Victor III* was the first [deleted] we saw. This submarine came out in about 1978. It has good [deleted] but was [deleted].

Coming on now in the *Oscar,* introduced in about 1982, you see a [deleted]. The *Akula,* which came out last year, is even quieter.

There are two key points to be made from this slide. One is that [deleted]. The other is that the things that are left available to us are also [deleted]. Historically we were able to work in [deleted] and this is a relatively clean region.

Surface ships don't make much noise here. It was confined to submarines. Now we are [deleted] where everything is there; surface ships, oil-drilling rigs, and everything. It is a [deleted] we are working in.

The [deleted] we have used in the past with Soviet submarines for [deleted] itself. You always see [deleted] when it is available. The [deleted] they use is [deleted] and also identifiable. The great advantage that we had before is that these were [deleted] as we pointed out on the previous slide. Given that you saw them, this is an [deleted] because each [deleted].

We knew what we were working with once we detected it. [Deleted.] As a submarine speeded up or slowed down, [deleted]. You always had your reactor on line and your electric power source going. That is what I showed you on the previous slide as going away fairly rapidly. [Deleted] propulsion also gives us [deleted] from the [deleted]. However, this is more difficult to [deleted] because every ship puts a [deleted] into the water as well as [deleted]. This also moves in the frequency spectrum with the [deleted]. It also moves in relative magnitude with the [deleted]. It is very hard to classify, and they can control that to a degree by simply [deleted]. Below a submarine speed of about [deleted] or so, you do not see this type of thing. In looking at the relative impact of this, insofar as detection range is concerned, if I had a sensor at the center of this circle and looked out at submarines built about the 1970 timeframe, this was the detection range that I would see. When the *Victor III* was introduced in 1978, this resulted in about a [deleted] of the capability that we had before. When the *Akula* was introduced, that comes down to about [deleted] and in the [deleted] we expect to be [deleted] and here about 5.

An average detection range on a tactical sensor now is now about [deleted]. Taking that all the way to here, that is [deleted] to about [deleted]. That is the serious concern that we face as we go into this [deleted].

What do we do? We have to make a [deleted] to other [deleted]. The broad diffused background that we see from powerful machinery is always present from any type of vessel putting that much power into the water. You always have [deleted]. Regrettably, all things put noise in the water like that, so it is not [deleted] as such as to source when you see it.

It also is a function of the [deleted]. When going fast, this [deleted]. When slow, it [deleted]. You can never get away from putting some energy into the water.

LOW FREQUENCY ACTIVE RADAR

Another region which we have not capitalized on before is [deleted] the equivalent of radar. We send out a pulse, get the echo from the submarine, and we have good targeting information because that gives both range and bearing capability from the target.

With active sonar, we have more or less [deleted]. Our maximum range is [deleted] in a very, very good environmental condition. Because we have been working at [deleted] of around [deleted].

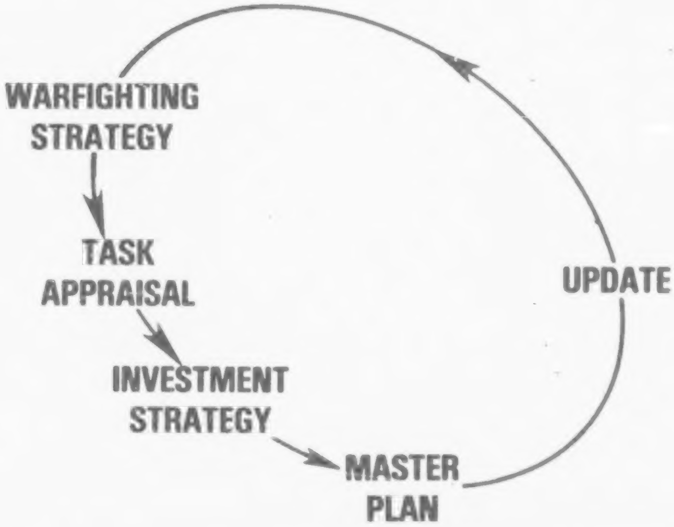
For example, our SQS-53 is at [deleted] for the surface ships. The submarine active sonars are down to [deleted]. We have to come [deleted] the frequency line to get the [deleted] that we need to make up for what we lost before.

We tested this over the years and technology programs tell us that we will be able to do it. This task will take some development in order to get out there. The potential is clearly there for us to operate at a [deleted] detection range for the sonar.

When we started looking at the threat and at the phenomena that we would have to exploit, we came to the conclusion that our currently planned forces, which were based [deleted] years from now.

We came to the conclusion that [deleted] offer solutions, but that these concepts require [deleted]. The planning process tells you how we set up the planning and how we got to the planning process.

ASW PLANNING PROCESS (U)



We now have instituted within the Navy a planning process for ASW starting with the war-fighting strategy. Our annual task appraisal provides an assessment of executability of the strategy. The investment strategy assures financial stability of the strategy. The master plan encompasses all the above and updates that on an annual basis.

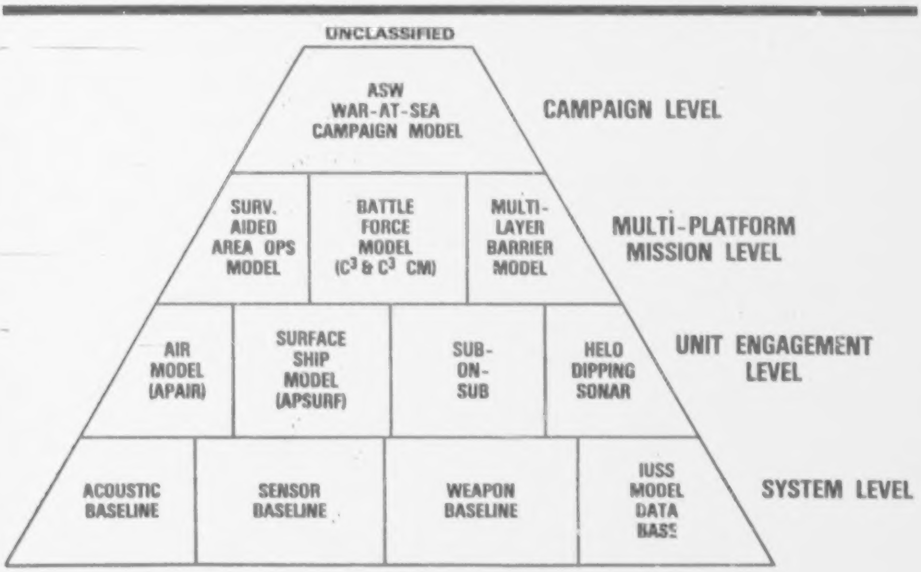
The key element that we have not had before is the ASW war-fighting strategy. Starting last year, we commenced work on this and took 4 months putting together an ASW war-fighting strategy in support of the maritime strategy. It was to be executable over the next 20-year period and it had to be coupled with research and development to be sure we had the planning process correct.

Given that we developed that war-fighting strategy we subjected that strategy to an intensive task appraisal where we took it apart to make sure that it was executable. Normally we looked out 10 years. We looked out 20 years this time to make sure there were no other corners we would have to turn as we went along.

The investment strategy is in work. We have done these two items. We are working on the investment strategy now to assure we can afford to make the transition. We recognize that we cannot add things on without looking at what has to come away.

We will have an interim ASW master plan based on this in the spring of this year. We will iterate this one more time through the complete process and have a mature master plan in the spring of 1987, and subsequently we plan each year thereafter to again iterate the process. We feel that by the spring of 1987 we will be in a very definitive state as to what we need to do.

MODELS FOR ASW APPRAISAL, STRATEGY AND MASTER PLAN (U)

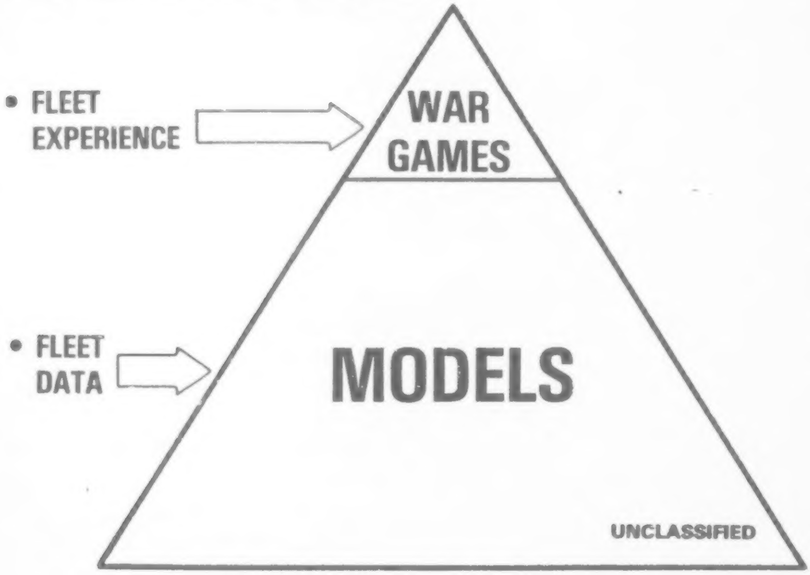

UNCLASSIFIED
ASW WAR-AT-SEA CAMPAIGN MODEL
CAMPAIGN LEVEL
SURV. AIDED AREA OPS MODEL
BATTLE FORCE MODEL (C^3 & C^3 CM)
MULTI-LAYER BARRIER MODEL
MULTI-PLATFORM MISSION LEVEL
AIR MODEL (APAIR)
SURFACE SHIP MODEL (APSURF)
SUB-ON-SUB
HELO DIPPING SONAR
UNIT ENGAGEMENT LEVEL
ACOUSTIC BASELINE
SENSOR BASELINE
WEAPON BASELINE
IUSS MODEL DATA BASE
SYSTEM LEVEL

We have a lot of confidence that we can develop these ASW warfighting strategies and do our planning because of the modeling base that we have built up over the years. I don't want to bore you by going through all these, but I wanted to point out that we do have a series of models built on a pyramid.

We start at the system level and build to the campaign level. For example, in our system level, we have baselines for the weapons, baselines for sensors, and unit engagement. We have models that model submarine on submarine engagements. We take that all the way up into a battle force model including ships, and aircraft, and we take it to a campaign model where we actually look at a battle. So we have built these up over the years and feel fairly comfortable with them.

MODELS FOR ASW PLANNING PROCESS (U)

INTERACTION WITH SOVIET FORCES



These are capped with war games. This is the analytical base by which we do war games. Over the past 5 years, we have introduced a new realism into the war games at Newport. We have used this process extensively, based on this analysis and these types of games, to come up with the ASW war-fighting strategy.

ASW is also unique in the sense that we are up against the Soviets every day, so we have acquired a very good knowledge base on [deleted]. This knowledge base is put into our modeling process to assure that our models are good.

The experienced officers that we have developed are involved in the war games, so we feel fairly comfortable with the process that we have to develop the war-fighting strategy.

I would like to talk just a bit about war-fighting strategies in general before I talk about the war-gaming process that we did to come up with the results.

Soviet strategy has three primary tenets. The first, of course, is to [deleted]. They perhaps are more [deleted] than any other country that we might be up against and that is, I am sure, due to their great losses in the Second World War.

They have a high priority to [deleted] forces because those forces are their [deleted] and they feel very, very concerned about their defense. They feel they must [deleted] to prevent us from projecting power into those regions. They do this in a process they call [deleted] that is, on an individual basis, their submarines [deleted] their [deleted] but based on putting all those together and stacking them up [deleted] they feel that they can [deleted].

This gives you an idea of what their intentions are during wartime or conflict. Right now in 1986 in this area, they expect to deny us the use of these seas out to [deleted]. That will [deleted] on out to about [deleted] in the year [deleted].

This is the significant area they feel that they must cover. Basically, what their intentions are is to [deleted]. Also they have their [deleted] set up so their [deleted] are set up here and here. You can see that this is quite an extension. It covers quite an area. It goes into [deleted] coming around to the other side.

Historically, we thought of the so-called [deleted] as a defense line. They plan to that over the years out to there.

SOVIET COMBINED ARMS THREAT

This is a chart which just shows the Soviet combined arms and defense in depth that they would take. For example, here we show the Kurils, the Pacific Ocean, and the Sea of Okhotsk. They have the [deleted] here being defended by these forces.

They would use geographic areas here where they have [deleted] and into the [deleted] to counter any trust that we would try to make into this region.

In recent times, we also see this expanding. Heretofore, we have paid great attention to an [deleted] working up in the [deleted] in the working forward in the [deleted]. But in recent times we recognize that we are going to have to be able to work in the [deleted] because that is where they will be keeping a lot of their defense capability.

As I pointed out, the so-called analogous response off our coast is a unique task that we are now in the process of addressing.

MARITIME STRATEGY

In turn, our maritime strategy has three phases.

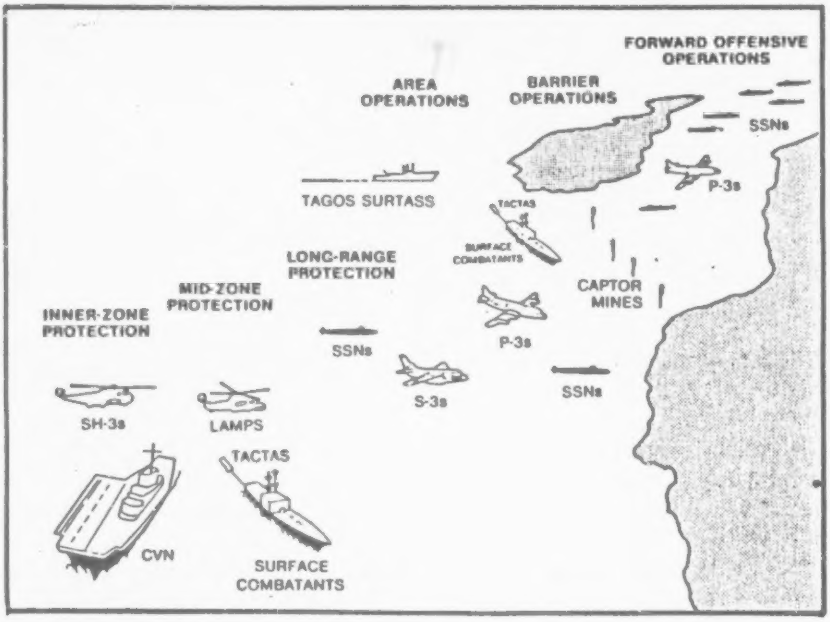
The first is a transition to war where we position our forces [deleted] to determine where they are and to be in goood position when the war starts.

Phase 2, to seize the initiative when the war starts and clear the areas so that our strike forces can carry the fight to the enemy in phase 3.

This is somewhat confused [slide deleted] but I will take just a bit of time with it because I think it does explain what we plan to do.

This is the ice line as we would see it in the winter/spring. We would [deleted] to operate against their [deleted] and their [deleted]. We would have [deleted] operating in this region. Along with [deleted] we would use [deleted] and the same thing on the other side. So it is a foward offensive posture when you start the conflict.

ASW MISSION:
CONCEPT OF OFFENSIVE ASW (U)


FORWARD OFFENSIVE OPERATIONS
AREA OPERATIONS
BARRIER OPERATIONS
SSNs
P-3s
TAGOS SURTASS
TACTAS
SURFACE COMBATANTS
LONG-RANGE PROTECTION
CAPTOR MINES
MID-ZONE PROTECTION
INNER-ZONE PROTECTION
SSNs
P-3s
S-3s
SSNs
SH-3s
LAMPS
TACTAS
CVN
SURFACE COMBATANTS

For the best description of our respective capabilities, they have a [deleted] we have an [deleted]. That is the focal point of our offense. Here we see our [deleted] one of the most capable systems we have to put to sea.

Within the battle force, we have long-range protection from P-3s, carrier based airplanes and SSNs. Mid-zone protection is from ships with TOWED arrays and LAMPS, and carrier based helicopters for the last line of defense.

This gives you an idea of the numbers of platforms that you would see in a wartime environment. This is a [deleted] projected environment that we used for one of our war games. This gives you an idea of the U.S. forces, as outlined here in the hexagons, of the battle forces that are put together. We have [deleted] and the [deleted] in the Pacific, and the same thing in the Atlantic. We have the [deleted] covered, the [deleted] and these carriers are working up to join.

We have SSN's in the yellow with the number of those shown here. The VP bases are shown here.

The numbers that you see here seem to be [deleted] but when you look at what the [deleted] I think you get an idea of the picture of the difficulties that we face here.

For example, we anticipate these numbers of Soviet [deleted] of these areas in time of war. In fact, these are not ready numbers, but numbers that [deleted] these are [deleted] so there is a [deleted] that we will be working against. These are the analogous response submarines.

If you look just in terms of the ratio of the numbers that they would have compared to ours, it is about [deleted], so there is a great importance on a qualitative advantage in being able to execute the strategy.

We took these through a series of war games as I described earlier, through very competent naval officers and technologists. These are theater assessments derived from the games for the prior [deleted] and these are the theaters we looked at, the [deleted]. At this time we feel that we are [deleted] that we are [deleted].

With the introduction of [deleted] as we get out into the [deleted] timeframe, we show [deleted]. They are putting [deleted] forces there and the [deleted] problem becomes more of a problem to us. This is also true [deleted]. This sounds somewhat anomalous, but it is much easier for us to [deleted]. We have to take that into account.

Finally, the full impact of the [deleted] comes out in the [deleted] timeframe and it becomes very, very [deleted] in most areas that we would look at.

In an overall global view we see this. As we said, in [deleted], we feel [deleted] and it [deleted] somewhat by [deleted]. But if we don't do anything to take advantage of the [deleted] sonar and rely strictly on [deleted] that will be [deleted]. I would like to take you through just one of the campaigns that we fought in this war game to give you an idea of how the events transpired.

This one is for the [deleted] for the [deleted] timeframe that we talked about earlier. We look at the Soviet submarine order of battle in the [deleted] at D Day, and then take that out [deleted] timeframe. We look at the [deleted] that we would achieve during that timeframe and look at the net effect it would have on our overall war-fighting strategy. We say that in order to have our [deleted] that we must move them there in approximately [deleted] in order to provide [deleted]. If we don't [deleted] for example, they would likely [deleted] so we have to have our battle forces [deleted] in that time.

That means that we have about that timeframe to [deleted]. In this case it is obvious that we are unable to do that. We do fairly well against the [deleted] and against those [deleted] but the submarines that can be a problem to us [deleted].

Looking at this timeframe, that was the cause for the [deleted] that we saw. Let me just explain a bit of what we feel that we have to do to rectify that performance based on this Vu-graph. First we have to make this line here at No. 1, come over into this region so that we [deleted] than we do now. If we do so in this timeframe we will have [deleted] so that our battle forces can come in. In this case it means that we have to [deleted].

One thing we saw in this analysis is that our tactical platforms retain a [deleted]. But without proper queueing, [deleted] we will not be effective in the timeframe required. [Deleted] in this process.

The second thing we saw in the analysis is that as you encounter [deleted] particularly those that carry [deleted] can be very, very bad for a battle force, whereas it takes [deleted] now with [deleted], capability. One of the new submarines can give you [deleted], so we have to be much more cognizant of that than we have been before. This means that the [deleted] itself has to [deleted] and we feel that [deleted] is the key to that.

Going now into the submarines shown in area 2 that are [deleted]. Basically, we feel that this is [deleted]. We have to develop a [deleted] to make sure that these submarines do not come out to get into [deleted].

Finally, we think that we have to put even [deleted]. The Soviets feel very, very strongly about [deleted]. If we can put more [deleted] we cause them to [deleted] more of the [deleted] that would be here to [deleted]. So given we can put more [deleted] we keep this line here. The combination of these are [deleted] for our forces themselves; [deleted] that would come out to enter the fray; and [deleted]. We feel these are the four elements that we really need to make our strategy work.

INITIATIVES FOR NEW COURSE

I would like to cover the background, first of all, what we call the ASW drivers behind those things that we need. I would like to talk a bit about risk because some of the things we plan to do are indeed [deleted] now and we need to make sure that we can do them.

Finally, given that we can do these, we have established a series of tentative operational requirements. These are concepts of systems which must be developed over this time period that will be available in time to counter the threat. The first of these is again based on [deleted]. We have invested a great deal in [deleted] for the ships concentrating primarily on [deleted]. This is a fine investment but what we need to do now is [deleted] to [deleted] to assure that we achieve the required performance across the board with the [deleted] is in the same category for the airplanes. Where our [deleted] receiving devices they [deleted]. Our systems need to be [deleted] has always been a problem to us. Over the years we have addressed it in varying ways. We have not, though, put the effort into [deleted] because we have been so good on [deleted]. We need now to do that because if you don't solve the [deleted] problem, we will have great difficulty.

Getting down into the [deleted] is primarily a problem of [deleted] technology. As we go [deleted] the power becomes [deleted]. It is a function of frequency. We are talking about in some cases very, very large sources of the order of [deleted] a ship. We have not done a [deleted] although we have done sufficient to know that [deleted].

Another item that is coming along which will be of great advantage to us in fiber optic transmission. We feel we will be able to take an [deleted]. and put it in an airplane and deploy that very rapidly in time of crisis. Fiber optics gives us a tremendous advantage in developing a very good [deleted] system that we need for this warfighting capability.

Now, let's look at the risk associated with this. As we talked earlier about [deleted] is dependent to some degree on the [deleted] that is, as the submarine [deleted] it becomes [deleted] to us, so that is a problem. [Deleted] is a problem. We are beginning to work in that region of the frequency spectrum [deleted] where [deleted] is, and we need to learn to [deleted] in that region. In [deleted] performance we are confident, but [deleted] is another problem we must solve.

In the whole process of [deleted] management, we tended to take a [deleted] or a [deleted] and try to do the [deleted] process with that. It is likely now that we will have to use a [deleted] approach to make sure that we can [deleted] properly. That requires us to be able to put all sorts of data together in the one spot to make sure that the [deleted] process works.

One thing that we have seen in our studies in recent times is that the Soviets, in a very, very [deleted] spend a great deal of time on [deleted]. We are learning a lot more about that as we go along, and we are going to have to spend a lot more time [deleted]. There are alternative paths primarily in the [deleted] side which offer hope in this arena but probably [deleted] that we are talking about here. Given that we can [deleted] these are the sorts of concepts or systems that we are talking about.

On the surveillance side, the use of fiber optics is needed for a system that we can get out in a hurry. We think we can do an [deleted] particularly the surface ships, and we hope to achieve detection in excess of [deleted]. We feel that we can improve our [deleted] on the [deleted]. We also need a [deleted] capability much better than we have today. Our submarines are the quietest in the world. We need to have a [deleted] we are not subjected to the [deleted] that the Soviet Union is building. If we can get the [deleted] and [deleted], that helps.

As we go into the [deleted] it is clear that the Soviets will follow us. They have followed us in everything else, so we need to develop a [deleted] to our own [deleted] at the same time. That primarily is in the [deleted] because they are the [deleted] and will be subjected to that in the [deleted]. [Deleted] are also important in this area because the Soviets spend a great deal of time with [deleted].

On the surface ship side, we intend to move [deleted] regime. We plan to put not only [deleted] on the surface ships, but we plan to put together a [deleted] whereby you have [deleted] and use the [deleted]. In [deleted] we feel very strongly about a [deleted]. We have to be able to work the [deleted] we have to have the [deleted] and other items. The air side is primarily [deleted]. A [deleted] called a tactical [deleted] sonobuoy which [deleted] so the [deleted]. It [deleted]. That is a [deleted] effect because we don't have to have the [deleted].

On the command and control side, we need a good [deleted]. This goes back to the business of if we are going to be successful we have to [deleted] be able to [deleted] and have that done [deleted]. The [deleted] as well as the [deleted] within the battle force are key items in order to make the [deleted] work in the active sonar system that we had talked about.

In oceanography, on the [deleted] we need to learn more about the [deleted] of that within the ocean.

We have not spent much time with that in the past few years. We need to beef that up.

I think we have learned very well in the last several years that our [deleted] effort has to be improved so we can make sure we keep pace with what they are doing.

Through this entire process, if we can do the things that we say we need to do, develop a [deleted] and put together the systems that we talk about that we will need by [deleted] we feel that we can change this point from here to up there and that is what we are basically focused on at this time.

SUMMARY

We know there are major challenges in the future. We believe that we are addressing them. It does require a new course over what we are doing now.

We have started, and hopefully the process will come to fruition in time.

Mr. BENNETT. Is the submarine the chief ASW platform; is it going to continue in the future?

Admiral WOLKENSDORFER. Yes, sir. I think as long as we have a forward strategy that we feel we must have, you have to have the salient point of that on the submarine.

Mr. BENNETT. I heard you talk a bit about mining there and I was wondering about your conclusion that additional mining capabilities are required, why aren't we buying the Captor mine? Or do you know that?

You can put it in the record.

Admiral WOLKENSDORFER. I don't. I would have to go back and check that.

Mr. BENNETT. I thought you probably would.

Mr. BENNETT. I have no further questions.

I have to go testify somewhere, so you just continue.

Mr. Spence.

Mr. SPENCE. Thank you.

The chairman asked about the Captor mine. We are interested in mining and mining warfare. We don't seem to see a lot of emphasis being put on it by the Navy. This morning in the charts, you showed that we had a mining option, part of our master ASW plan.

Admiral McDonald, I think was saying that we didn't have half the mines that we needed in NATO, and I just wondered how our master plan accommodates the deep-water mining requirement in view of the fact you showed them on there as being one of our options and we aren't asking for any funds for the Captor mines in the 1987 budget.

Admiral WOLKENSDORFER. I can't answer that question specifically. I can tell you that what we are developing here are the requirements evolution for ASW, and we don't have the full impact of this in the Navy's planning system at this time. So that is the best I can say.

Mr. SPENCE. You do think it is a necessary part of our ASW master plan and it is a desirable part of it from what you said this morning in the charts.

Admiral **Wolkensdorfer**. We feel that mining is a desirable part and a necessary part of the ASW master plan.

Mr. **Spence**. I understand, too, just from the little that I know about it and the reading I do and so forth, that the Captor continues to be tested for additional technical uses and missions. Have these missions been considered in the new plan, the ASW plan?

Admiral **Wolkensdorfer**. Yes, sir, they have.

Mr. **Spence**. That is what you were talking about when we had the option about the choke-points and so forth, because it seems mining is one of the less costly ways, I guess, of dealing with the problem since you don't have to do a lot more than put them out there and let them go from there.

That is all I have, Mr. Chairman.

Mr. **Sisisky**. [presiding]. Mr. Price.

Mr. **Price**. No questions.

Mr. **Sisisky**. On the SSN-21, are we building that ship for a quiet torpedo launch, do you know? If it is a problem, should we not be addressing the research of that submarine?

Admiral **Wolkensdorfer**. I will have to get back to you.

I know that we have a development program in place to develop that capability. I will have to get an answer back to you.

Mr. **Sisisky**. How would you be doing it on the other submarines? Are you talking about upgrading those submarines, because that is a pretty noisy thing, isn't it?

Admiral **Wolkensdorfer**. Yes, sir. Perhaps Mr. Keane, who is from the Secretariat, can answer the question.

Mr. **Keane**. As you may recall, the SSN-21 has 30-inch tubes for weapon firing. It is intended that those tubes would be sleeved to allow for quiet launch, and the technique in mind is to flood those tubes and swim out the weapon before firing so that the ship is being constructed for quiet launch.

The next thing we are intending to do is quiet the firing and the travel of the weapon itself.

Mr. **Sisisky**. It just seems to me this would be an ideal time while we are doing that and I do know they have larger torpedo tubes.

Do any staff have questions?

Mr. Schafer.

Mr. **Schaefer**. Admiral, in view of the trends that you discussed and a [deleted] why does it make sense for the U.S. to expend large sums to develop a very quiet submarine like the SSN-21? You seem to be painting a picture here of things getting so quiet that you have to go active.

[Deleted.]

Admiral **Wolkensdorfer**. Well, I think this does not all happen at once. [Deleted] is not simply an on-off switch. There will be a period of time as these [deleted] but as I pointed out to you earlier, I think the environmental conditions that we work in the more [deleted] in the [deleted] are much more conducive to an [deleted] because those are much [deleted] waters of the world. So you can maintain that type of capability in the [deleted] areas much, much longer than we are able to do that, say, [deleted], and that really for the foreseeable future will maintain a [deleted] up in those regions.

Mr. CAVAIOLA. You mentioned the challenges in technology, moving to [deleted]. Can you just review quickly what those are, and also can you address the detectability? Is there any less detectability, someone pinging a low-frequency sonar, than one at a higher frequency?

Admiral WOLKENSDORFER. If I may do the last first, the [deleted] of the active sonar [deleted] will be [deleted].

I don't think there is any question about that, but heretofore when you worked with [deleted] you have been working within, say, [deleted] and so that piece of information is much more valuable to you when you are within [deleted] of somebody than it is when you are out at [deleted]. We are talking about a [deleted]. A [deleted] that we have not had before. So that piece of information is [deleted] at that range.

I would also point out that as you move into [deleted], I think you move away from the [deleted] exercising that. In other words, if you have a [deleted] you will have [deleted] platform, not only as a [deleted] in the [deleted] operation, but as a capability to [deleted] that you get, so it is a different way of doing business, there is no question about that.

I think you would not view that as doing a [deleted]. You are going to have to have [deleted] able to do [deleted] acoustics as well, but the potential there of getting the very, very [deleted] of, say, [deleted] is really a very, very good potential, and we feel we can capitalize on that.

Mr. CAVAIOLA. Are the power and size requirements that we are talking about of such a magnitude that we are going to have to think about different designs for surface ships that would accommodate something like this, or could ships that we are designing today accommodate this sort of low-frequency active sonar?

Admiral WOLKENSDORFER. We feel that ships designed today [deleted]. We have to put sea sonars of these sizes, primarily to [deleted]. As you go down to [deleted], say, of [deleted] or so, that is a very [deleted], and you would put that on something like a [deleted] ship or in proximity to a [deleted] ship, because you would probably have to do that [deleted].

It is a [deleted]. As you get up to about [deleted] or so, you can talk about things that you can [deleted] so we feel that we can do that. It is not a trivial technical problem.

I don't mean to imply that it is a very, very difficult thing that we need to develop, but I would point out that we [deleted]. They have been [deleted]. The NATO organization has put a [deleted] to sea, and we feel very confident that the physics are there to support that.

Mr. CAVAIOLA. Thank you.

Mr. SISISKY. Can you change that word to—can accommodate—the sonars? There is a difference, you know. Could the ships we are building today, can they accommodate them? You said they—could accommodate—them.

Admiral WOLKENSDORFER. You would have to make provisions for them, sir. It is not a simple add-on. You wouldn't just take them into the dry dock and slap them on the bottom, if you will. There would have to be some changes made to the ships.

Mr. SISISKY. Any further questions?

We thank you very much this morning. The committee will stand adjourned until next Tuesday at 10 a.m.

Thank you very much.

(Whereupon, at 10:05 a.m., the subcommittee adjourned, to reconvene at 10 a.m., Tuesday, March 4, 1986.)

SHIPBUILDING AND CONVERSION PROGRAMS FOR FISCAL YEAR 1987

House of Representatives,
Committee on Armed Services,
Seapower and Strategic and
Critical Materials Subcommittee,
Washington, DC, Wednesday, March 12, 1986.

The subcommittee met, pursuant to call, at 1:30 p.m., in room 2216, Rayburn House Office Building, Hon. Charles E. Bennett (chairman of the subcommittee) presiding.

STATEMENT OF HON. CHARLES E. BENNETT, A REPRESENTATIVE FROM FLORIDA, CHAIRMAN, SEAPOWER AND STRATEGIC AND CRITICAL MATERIALS SUBCOMMITTEE

Mr. Bennett. The subcommittee will come to order.

Today the subcommittee completes its scheduled hearings on the Navy's fiscal year 1987 budget request with a wrapup provided by the Secretary of the Navy, the Honorable John Lehman; the Chief of Naval Operations, Admiral James Watkins; and the Assistant Commandant of the Marine Corps, General J.K. Davis.

Over the past several years this subcommittee has worked closely with the Navy to move forward toward the goal of a 600-ship Navy. It was important to have such a goal as we began to rebuild the Navy for the future.

It is one of the few goals that we have actually achieved in this effort that is ascertainable, beautiful, and it would be a pity to hurt it. With the ships already authorized through the last year, that goal will be achieved by the end of this decade, and that is, indeed, a remarkable and laudatory achievement.

I am a believer in building success on success and, therefore, I think we ought not to look negatively about this.

Our common goal should now be to see that we maintain the 600-ship fleet, not only in numbers, but also in the quality of ships and in people. This year's shipbuilding request, for example, is for 21 ships, about the number needed to sustain the 600-ship fleet.

I mentioned at the start of our hearings last month that our efforts this year should be influenced greatly by the effects of the Gramm-Rudman-Hollings legislation. Although the Budget Committee has not yet reported its fiscal year 1987 budget, there has been much talk of large cuts in the defense budget submitted by the President.

The subcommittee needs to understand the effects of cuts that could take place under an automatic budget reduction. The Gramm-Rudman bill is not one which I personally supported. I feel like the Constitution gives Congress a responsibility to provide for the national defense. Most of the expenditures of the Federal Government are not in that category at all; they are not primary responsibilities of the Federal Government at all. So I look at the thing as not $1 more than we need for national defense; and not $1 less.

There are a number of specific items that the subcommittee wishes to hear about from you gentlemen here today. Among these are the practicality of competition and multiple sourcing in the light of a declining budget, and the desirability of multiyear programs in such an environment.

The subcommittee is also interested in the large number of new starts in the torpedo programs, again in light of the deficit reduction targets. In the R&D hearings yesterday, there was some talk about maybe there should be some testing of some of these torpedoes against other torpedoes or other methods of delivering the weaponry.

Among the legislative items for discussion are authorization of the Mariner Fund, for which three bills are currently before the subcommittee. And the desirability of enacting into the law the Navy's current policies on locations for ship maintenance and repair.

Mr. Secretary, we are looking forward to any comments you and your fellow witnesses would like to make on these issues. And we are delighted that you are with us.

STATEMENT OF HON. JOHN LEHMAN JR., SECRETARY OF THE NAVY

Secretary **LEHMAN**. I thank you, Mr. Chairman. It is a pleasure to be back before the subcommittee. Since all the members were present at the posture hearings, there is no need to replow that ground.

Let me just say in summary, before we go to your questions on the specifics, that, as you have so rightly said, the accomplishment of the 600-ship Navy is something that is not to be tampered with lightly. It is a major accomplishment which we view not as a temporary accomplishment, but as a fundamental shifting of our naval posture from the ups and downs of the post-war decades, following World War II, to, what we now view as a long-term stability necessary to maintain a deterrence and a stable peace for the future.

We view this as a beginning of the post, post-war period. And we in the Navy have been building, in partnership with you, one of the greatest contributions to the health of our national security since before World War II. That is the coherent and logical strategy that Admiral Watkins has put in place. That strategy forms the intellectual framework for everything we do.

It gives everyone, from sailor to admiral, and every civilian a framework of reference, of logic, and of discipline, to help him make choices every day on what priorities need to be set in operations, planning, allocating money and in maintenance. It is alive. It is renewed, reexamined and challenged every day throughout the Navy, both formally and informally.

That is a precious accomplishment that we want to protect long into the future. The Navy that has been built up logically from that strategy, is a Navy that is made possible by the concurrent reforms that have been brought about in the way we do business.

You asked about competition. That is a fundamental part of it; but not the only part. The most important step has been, to use that intellectual foundation of strategy to provide a self-discipline for making choices. Second, we have stopped setting an absolute priority for requirements, which in its extreme, becomes gold plating.

We have developed a system where the change-order mentality of past decades, the constant changing of requirements, and adding of capabilities, has been brought under a firm discipline; and it works. That discipline had to be provided first. Then we could really establish competition and fixed-price contracting discipline, and not repeat the mistakes of prior attempts to compete and to fix price.

Competition is not a brandnew idea; it has been tried many times before. The famous cases of the total package procurement of the 1960's and early 1970's, which brought about the claims that you had to wrestle with and that you helped to bring the solution to, were the product of attempting to move to competition and to fixed-price contracts, without first disciplining the requirements process within the service.

We think we have succeeded in doing both, with one making the other possible. And we believe that, as a result, we can continue to maintain this 600-ship Navy at a steady state, without sacrificing readiness, that includes dealing with the inevitable contractions during periods of austerity such as we are now having this year with Gramm-Rudman.

As you make your choices, during these periods of austerity, it is necessary to bear in mind the frugality of certain parts of what we have accomplished in acquisition such as second sourcing. Establishing a second source, is a difficult process, as you well know. You bore with us and helped us through two difficult years in establishing the second source for the Aegis cruisers, and now the DDG-51. The second-sourcing for the submarines was done before my watch. You have seen how hard it is to get established.

We have convinced boards of directors all over the country, to take risks with their capital, to invest in upgrading facilities, to invest in the tooling necessary for effective competition and to improve productivity. If careful attention and great care isn't given to the cuts that are made, and we are, for instance, in some lines cut below the levels possible to maintain dual sources, then we will pull the rug, out from under the companies that have believed us, when we said that we were serious about stabilizing the programs and keeping competition.

So, as you address the difficult choices that you have to address, and we will be working very closely with you as we do every year, there is a vital necessity not to undo the competitive base that we have brought to our procurement. That is particularly true in shipbuilding, in multisourcing, and the fixed-pricing disciplines. We cannot readily go back in and renegotiate cuts that go beyond what a minimum fixed price contract requires. It can all unravel very quickly.

So, with those few generalities, I would defer now to your questions.

Mr. Bennett. Admiral Watkins.

STATEMENT OF ADM. JAMES D. WATKINS, CHIEF OF NAVAL OPERATIONS, DEPARTMENT OF THE NAVY

Admiral Watkins. Thank you, Mr. Chairman.

This is among the last few times I should appear on Capitol Hill as Chief of Naval Operations.

Mr. Bennett. We are going to miss you.

Admiral Watkins. My 4-year tour expires before long. I did want to take this opportunity to thank this committee in particular, for the time and effort that you have put into understanding things maritime. Obviously, that is the purpose of the committee. But many members don't spend the time they need to make the kind of judgments that you all make over here. I think this committee, in particular, can take tremendous credit for the vastly improved Navy that we have today, in people, capability of ships and aircraft, all the good things that have made this a very special Navy, and these very special years.

We are nearly there. We have the 600-ship Navy authorized and funded by the Congress. We have gone through the big growth years. They are over now. From the 7½-percent average of the first few years of this decade, we are down, as requested in the 1987 budget, to about 1 percent real growth for the Navy. We would be unable to achieve such a low growth rate had we not had a Secretary of the Navy who had the energy and the foresight to drive us into business practices which the Navy never understood before.

We were projecting 9 to 10 percent growth over this decade. To have us in 1987, to be able to come in—and in 1986—with zero or 1 percent real growth, I think, is a measure of the degree to which we have been able to efficiently manage the procurement actions, and the other actions necessary to build the 600-ship Navy at a fair cost.

The thing I am most concerned about, as I leave the office, is having established what I consider a superb base for the long haul of the United States. We don't do that very often in this country, set our sights on a goal and stay with it for very long. We have done it here for the 600-ship Navy to date. We have built a maritime strategy. As the Secretary pointed out, it is the rationale and the basis for our budget request. The tragedy would be, were there to be a triggering of the Gramm-Rudman-Hollings bill, to force us to uncouple the strategy from the budget submit. We have never learned how to build a budget in relation to a deficit. We always build a budget in relation to threat to the Nation. And I believe that all of our predecessors have done that.

When we are constrained by the kind of formula in that amendment, we have very serious problem understanding among ourselves, as to how to come before this committee and tell you why we need what we need. We have a strategy; it is linked to a threat, and therefore, we can follow through. We can argue whether or not we need this in priority, 1 year over another. But there is a basis. There is a logic train in deficit planning. The logic train begins to fray at the edges very badly if sequestering is ordered in any significant amount.

So that is my great concern, that I see very little discussion anywhere, including on Capitol Hill, of what this might mean in terms of national policy options that might have to be implemented. Do we know what it means?

There seems to be an avid interest among some to attack defense. Very few are looking at what that means in terms of shooting themselves in the foreign policy foot.

I think that as the time goes on we have to be very sensitive to the long-term detriments. I think this committee could take the lead in trying to force the issue out on the table as to what national commitments may have to be adjusted in the face of some of the extremes that are being discussed, which if imposed would be tragic for this Nation.

Does it mean we want to pull forces out of Europe and out of Korea? Do we want to take the battle groups out of the Mediterranean? If this is what the Nation wants, then let's open the debate up now, in parallel to the attacks on defense.

My feeling is that in these past few years we have been excited about a concept in the Nation, and certainly within the Navy, of being able to achieve some national objectives with dignity, with self-confidence, so that the national policies, the foreign policies, of this country can be carried out well. We have come a long way toward doing that. We are not at the end of the line, but we are very close to it. To grab defeat from the jaws of near victory is a frightening concept.

If we do this we could cycle into a deep sinusoidal curve. At the nadir of another curve, it will be the 14th time we have cycled across some reasonable means for defense planning since World War II. It is the most expensive way possible to build the defense budget.

It is much better to say, let's take a blank percent real growth, and then stick to it for some period of time, and give the stability to people like the Secretary who are trying to contract properly, to give industry a chance to balance books in an orderly fashion, and to get our audits organized. Because we are now going to cycle down the other way, we are going to upset the orderly process and add variables to the equation that will be very difficult for you over here to analyze. Now where are we relative to anything? So these are the worries I have as I leave the job.

And, again, I would thank all of you on this committee for the understanding and the strength to press on with the strong maritime posture for the Nation, of which we, of course, are the integral part.

And thank you personally, Mr. Chairman, for the support you have given us.

Mr. **Bennett**. We are going to miss you.

Speaking for the Marine Corps, will be Assistant Commandant for the Marine Corps, General John K. Davis.

STATEMENT OF GEN. J.K. DAVIS, ASSISTANT COMMANDANT OF THE MARINE CORPS

General **Davis**. Thank you, Mr. Chairman. I don't have a statement. I will be prepared to answer any questions concerning the Marine Corps.

I do echo the concerns that were expressed by Secretary Lehman, and the CNO.

I would like to express our thanks to you for permitting my substitution so that General Kelley could complete his west coast trip that he has had planned for some time.

Mr. **Bennett**. Thank you very much.

Thank you all.

Mr. Secretary, the committee heard testimony last week on the Mariner Fund. And this is a thing which we really haven't finalized in our own minds on this committee. There are good things and there are problematical, difficult things about it. And we are trying to see if we can make something useful out of this. It has great popularity in Congress.

Could this program provide useful ships; and is there a need for militarily useful ships of this nature; and do you have any feelings about it?

I presume the people on your staff, if you haven't read it, have read this exact proposal. Is there anything that you would like to suggest, improve, or change in any respect?

And before your answer, I must say, in a way another tribute to the Navy and your leadership, that we found funds, which now everybody is trying to get their hands on, and they were achieved by the fact of your great leadership in financing ships, property, and getting the competition, bringing prices down, and making your request modest, that this money has been achieved. It is a paradox in a way; people act as if you had sinned somehow in saving the money. And they are trying to get for other purposes that they have.

Now, getting back to the Mariner Fund. This is a popular program. I have concerns to be sure that the ships that are built will be used. And I am not sure what kind of language we can put in the bill to do that. That is my major concern. I know there is a need for merchant ships. I know there is a need for ships that can be turned into military use for transit in time of war.

What I don't know is if this particular program is a workable program. And if there is some amendment that make it more workable than it is now. Can you give your views on the Mariner program?

Secretary **Lehman**. Mr. Chairman, the Mariner Program was not in the President's budget, so of course, I am not in a position to formally support it. However, I would like to give you some of the considerations we have within the Navy about the program.

We very definitely, see the merit of having new militarily attractive ships operating in the U.S.-flag Merchant Marine, as opposed to be being laid up, or not existing at all. We have made great strides in increasing the RRF, but that is partially a case of "deadman's" shoes because we have benefited by picking these ships up, as U.S.-flag lines have gone out of business.

While the RRF is a very real mobilization asset; we don't have crews for these RRF ships. And, while I strongly support continuing to the objective of some 116 or so ships, and possibly beyond that for the RRF, it is creating a new issue that soon we will have to come to grips with. Where are we going to get the mariners to sail the ships?

So, the attractiveness of having a wider range of modern, militarily, usable ro-ro's and break-bulkers in the Merchant Marine of the United States manned by American merchant sailors is very attractive. And, rather than see our hard earned savings disappear into the ethers or even some other account, we would certainly see the merit in proceeding with this program.

Nevertheless, there are down sides to it that we must recognize. It is a continuation of a subsidy by other means. It sets a precedent of shifting a subsidy program from another department or agency into the Navy budget. While the realities of this Mariner Program are such that that isn't what is being done this time, if the precedent were followed in future years, it could lead to giving up combatants, in order to continue to fund the subsidy program.

As a one shot deal it is hard for us to interpose objections to it, but as a precedent, there is concern. We would not support any program to give up any naval combatants in order to fund merchant ships.

We paid that price. We made that mistake in the years prior to World War II, and the Atlantic is littered with merchant ships filled with tanks and aircraft that could have ended the war much sooner. But, we had no combatants to protect them and get them across, and they ended up on the bottom of the sea. We won't make that mistake again.

I don't know whether that was helpful?

Mr. **Bennett**. That was helpful.

I have been requested by some people to suggest that the bill that we bring out would provide that bidding for repair and maintenance of Navy ships of less than 6 months duration be restricted to the ships, homeport if competition is, in fact, available within that homeport.

This sort of follows on with the encouragement which we gave to a number of homeporting areas to create competition, and some of them did it, at an expense of many millions of dollars and, therefore, it is of grave concern to those companies particularly, that if you should eliminate their opportunity to compete on a basis that they thought they were going to be able to compete, they, in fact, made an investment of millions of dollars on a theory that is now under attack. I would just like to ask you, do you think that language like that, providing there is competition within the home port, that if it is going to be short duration repair that it would be bona fide to do it in that home port?

Secretary **Lehman**. We would certainly support that for reasons of quality-of-life and morale for our crews. And we think that for SRA's shorter than 6 months, the disruption that results from coastwide bidding far outweighs the savings that undoubtedly would be achieved by it. There would be some savings; but they would not be that significant, assuming we were in a monopoly or oligopoly situation in the home port.

Mr. **Bennett**. Mr. Spence.

Mr. **Spence**. Thank you, Mr. Chairman.

Mr. Secretary, Admiral, and General, I was just sitting here awhile ago reminiscing talking to the Admiral, Mr. Lehman, and so forth, back over the years under previous CNO's and Secretaries of the Navy, and Presidents, Commanders-in-Chief, we have problems trying to work out a shipbuilding program. And we haven't had that much of a problem here in recent years, thank goodness, I am happy to say.

I remember when we had the Secretary of the Navy, and CNO, down there fighting us on building that last big "nuclear carrier," as the President called it. We told him twice, and finally we got one through, the last one; then we got two last ones after that.

And so things do change with people. And I am happy to say that with the relationship we have had, and you have done so much to expand our Navy, as it should be.

Mr. **Bennett**. We promise not to fight you on the next last.

Mr. **Spence**. Mr. Secretary, I just had a question, a question awhile ago, a good one, about the state of our industrial capability, capacity to build ships, and our stockpile in this country, which we both are concerned about in this committee. If we were to become involved in a war, do you think we have the capability to build and replace, to build ships to replace the ones we lose in time of war, and an adequate stockpile to be used in case of a war?

Secretary **Lehman**. Congressman, I believe that our stockpiling is adequate, given the current geopolitical situation. But we depend on just one area of the world for nearly 50 percent of our top four raw materials what are called first-tier minerals. That area is separated from us by a great deal of sea space.

Right now the sources in southern Africa are fairly reliable. That could change in the future. That could change our view of stockpiling of the top four.

So, right now I would not consider stockpiling as a problem for war mobilization. In fact, I think we may be overstockpiled in some significant areas because of old assumptions.

But, be that as it may, the shipbuilding capacity we have for mobilization today is a tiny fraction of what it was in World War II. We were building two ships a day in 1942.

Indeed, when we hit the peak in March 1943, we built 145 merchant ships in one month in this country. We are currently turning out an average of about one a year right now. The yards that turned those ships out all over the country are gone today.

We are down to producing new construction naval ships in about 21 yards right now. That number is significantly larger than it might have been thanks to the increased numbers of ships, and the competition, and the dual sourcing that we have brought about during the last 5 years with the firm support, and leadership, and, indeed, the prodding of this subcommittee. Just 5 years ago that number was only nine yards. And indeed, 75 percent of our shipbuilding was in only three of the yards.

So, we have moved in the nick of time to stabilize a much larger industrial base. But it is only a fraction of what was there before World War II.

Mr. Spence. Beyond that, if I can interrupt you, Mr. Secretary. Things like our basic industries, I just read one day, yesterday, about Japan producing most of these memory chips now, and machine tools, for instance, all these kinds of things we have to have, you know, basic industry, to supply the yards and all the other bigger defense plants. That concerns me, we are loosing our basic industry in these areas.

Secretary **Lehman.** You are absolutely right. And it is a disturbing long-term trend. It emphasizes all the more why there is no alternative to a forward offensive strategy for the U.S. Navy.

We have to employ our forces early to see that the Soviet Union, if she should choose aggression, does not have the luxury of preying on our lines of communication, and inflicting the kinds of attrition that we suffered to our merchant fleet, our strategic lift, in World War II. A forward strategy is the only possible strategy that can prevent our losing any conflict very early through the loss of our merchant fleet and our ability to lift our strategic requirements.

Mr. Spence. Thank you, Mr. Secretary.

Admiral, you have done a good job.

Admiral **Watkins.** Thank you, Mr. Chairman.

May I add one point to what the Secretary just said. There is another growing concern over the basic materials such as chips. Today we are producing more and more partial components, which are then shipped in their entirety to foreign nations, worked in the foreign nations for certain aspects of the equipment, and then returned to the United States.

I don't know how we do that process or follow that process in wartime. I think alternative processes need to be looked at as a matter of some urgency before we get too far into that practice.

Today we do not trace that process within the Navy itself. When we procure an item, we put it out on contract, on competitive bid, and we are not sure exactly what the manufacturing process arrangements some contractors might have with a foreign nation.

In all of these cases we have a chance now to control the process if we get on top of that policy, review them in some specifics, and see what we need to do before we get held totally hostage to that kind of arrangement, which is even more difficult than raw materials.

Mr. Bennett. Mr. Sisisky.

Mr. Sisisky. Thank you, Mr. Chairman.

Admiral Watkins, and the Secretary, also, General Davis, I am not like Mr. Spence and the chairman, I have never served on the committee under any other Secretary of the Navy, or Chief of Naval Operations. But I can tell you, Admiral Watkins, you will be missed by this member, and I am positive the rest of the committee.

Your sincerity and knowledge are beyond apprehension to me. I appreciate the advice and other things you have given me, even though sometimes we disagree, and I will get to that in a moment.

Your sincerity in being worried about the budget, I share with you. And it isn't a sequestration that is my big worry right now. It is the freezing of the outlays, which you know with the effect on the budget authority.

And I think if Gramm-Rudman is even wiped away now, I think the psyche in this body is to cut the deficit to $144 billion, and the real trouble is that 50 percent of that cut is going to be in the Department of Defense. I think it is implanted in enough Members' minds now that it is going to take place.

I don't know what the administration—well, I do know because I suggested what the administration can do, and I would just hope that when we find that the defense and the security of this country are going to be in jeopardy the President will have a summit, and throw everything on the table, and see if we can come to an agreement, but that is beside the point.

Serving on this committee we kind of set the policy, and I don't know whether we had the opportunity to set the policy as to strategic homeporting.

Serving on the Personnel Subcommittee, and I also serve on the Military Construction Subcommittee, we find that we are the victims of policies that are set in prior years. Military construction has to build the facilities to take care of the weapons systems that other committees buy. And personnel has to provide the people in order to do that.

I didn't want to bring it up today, but I think it is only fair since both of you gentlemen are here, I am sure you have already heard some arguments against strategic homeporting. It came to four, basically.

And I have been accused of protecting the Norfolk, VA, area. I have been pretty well assured that the Norfolk, VA, area will not be impaired by this; and I am confident that is true.

It came about, basically, because we may have to cut $1 billion to $2 billion out of the military construction budget. That budget is $9.9 billion. So you can see where the problem lies.

To be very honest with you, reading the GAO report, I was not satisfied that the Navy's argument for strategic homeporting in these difficult times as an absolute necessity, and, at the present time, was of that great consequence.

So while both of you are here today, I will give you the opportunity to enlighten me. I reserve the right, maybe, not to agree with you. But I would certainly like for you to express yourself on that.

Mr. LEHMAN. Well, Congressman, we really appreciate the opportunity to do that, because we found the GAO preliminary report to be highly inaccurate and unthorough. But since the concept of fleet dispersal originated with the fleet, I think, it more appropriate that Admiral Watkins begin the explanation of the policies.

Mr. SISISKY. Mr. Chairman, with your indulgence, I hope it is within order, even though this committee is not dealing with it directly, that they do have the opportunity. Because I know you questioned me on it.

Mr. BENNETT. I would never interrupt.

Admiral WATKINS. As I said earlier, we start everything we do in the Navy with strategy. Our global maritime strategy is the starting point for every policy decision that we made; and strategic homeporting came directly from this maritime strategy.

Mr. SISISKY. This is hard to believe but nobody prompted me to ask that question, even though you have got handouts. So, I want everybody to understand that.

Admiral **Watkins**. We are ready at a moments notice on strategic homeporting.

Secretary **Lehman**. Just ask us any question.

Mr. **Bennett**. It should be observed that the new homeporting idea was really initiated before all these binding financial things came into being. Of course, we know there are not going to be two kinds of navies. You are not going to have some people at one port going to have one kind of treatment; and another port, another.

So, that is what disturbs Mr. Sisisky and I. Because we have both served on the Military Construction Subcommittee, and we know you are not going to turn down a chapel at one place, because it was a different kind of a homeport. You are going to have all these expensive things eventually done with whether you do them to begin with or not.

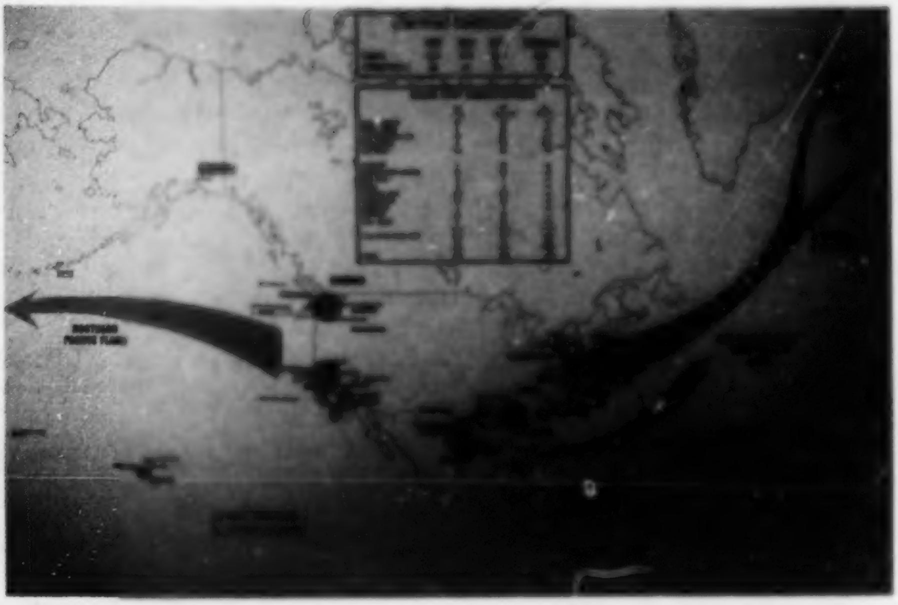
So this financial bind is the thing that worries both Mr. Sisisky and I, not to say they are not valued in dispersal.

Now, could you address this, Admiral Watkins.

Admiral **Watkins**. When I was commander-in-chief of the Pacific Fleet and looking at the dispersal of my ships in that fleet in the 1981 and 1982 timeframe, it became very apparent to me, as the Navy was going to grow in the future, and as we began to see the flow of Trident submarines into the Bangor, WA, area, and as we began to see the flow of additional combatants into San Diego—because, as you know, we had already moved out of Long Beach in the last decade—I saw an extreme mismatch of ships to requirements. This mismatch was both for the current, mid, and long term, with no actions going on anywhere that I could see, to do anything but look at it from only a cost-effective point of view.

Obviously, if we would put all the ships in the Navy in one port, that is the most cost-effective situation. We all recognize that. Seashore rotation would be all in one city. We would have very little PCS. We would be all homesteading. And it would be a wonderful thing from a cost-effective point of view. Militarily it would be a strategic disaster. Now, what is the right number?

Well, this is the way I came to rationalize it. I have given you a chart here, which I would like to put in the record, that tries to encapsulate what the military strategy is concerning strategic homeporting. And if you look up in the upper left you see a totally denuded Northwest Pacific port area.



What that yellow circle means, without any green in it, is that there is nothing there right now. In other words, at the end of this year we will have seven Trident submarines at Bangor and no naval surface combatant forces to deal with that issue.

I think it would be irresponsible on our part, were we not to fix that. We need to carry a battle group there so we have a fighting force that can go out and do antisubmarine and surface warfare against the Soviet amassed in the Gulf of Alaska today. They are there not only with their attack submarines, but their missile-firing submarines as well. And we have no surface combatants in the region.

That means we have to steam 2,000 miles out of San Diego and maintain a set of ant-like trails, logistic support ships, that you wouldn't believe, to be able to support that operation. And that to me is not sound.

So when you factor those costs into long-term costs, they are extensive. We haven't even tried to put that into the cost factor, and neither did the GAO. They were not interested so much in that, as we are.

Now, in San Francisco. What did we have in San Francisco? We had two carriers and no surface combatant forces. Yet we have the possibility of all the military logistic support forces for the entire Pacific Fleet bottled-up up there.

So, this is a terrible mismatch when you talk about tactical employment of forces. What we need are the matching surface combatants for the two carriers. We need some of the MLSF support ships down in the southern region, so that the battle groups made up of these units can work well together. Now, why do you want them together?

You want them together because the Congress and others have told us over the years to cut down operating tempo, take advantage of modern technology, and use the shore facilities and the imbedded computers in our weapons systems to do all of the simulation we can do in homeport. Let's do all the training we can at anchor, alongside the pier.

That is what we are doing today; a significant amount, like 20 percent. That means that you have to have the combat teams down in the centers of those ships, all hooked up to our NTDS, Navy Tactical Data System, relaying through satellites, using all the simulations capabilities that we have built into these systems over the years. We can now run an entire battle group operation right in port. Iron out communication bugs, work out all the procedural differences. We then can go quickly to sea, and do it for real; and save big tax dollars for the taxpayer. That is not in the GAO report.

The right way is to live together so you can fight together in today's modern technology. The solution is a good mix of ships, almost more than anything else.

In addition, we felt it very important to make a selection of where we put out battleship battle groups. We will be deploying our first battleship battle group to the Western Pacific this year. It will go out with an Aegis-class cruiser, DDG's and others using land-based air support, Navy, Marine, and/or Air Force. We need a homeport for that ship.

We went out and asked several cities that have potential to take it in, saying we will homeport it with the lowest bidder. And that is what we did, as cost-effective as we could make it. Now, the east coast.

On the east coast, if you look at the Charleston naval port complex, and the Norfolk complex, you can actually see from the oceanside the ships in port, in one of the cases. This is the kind of scenario we would love to have, as a target for the U.S. submarine force, and our mining force. On the east coast we wanted to take advantage of the littoral of the east coast and the gulf coast of the country, to spread out additional units that would also straddle the sealanes of communication that you see there. They need generally to be in the region because, again, it is steaming time, it is training time.

The maritime defense zone concept with the Coast Guard is involved in this plan. It seemed to make a lot of sense to me, as a military man, to spread those forces out in a way that was militarily sound, consistent with the strategy.

Also, more importantly than almost any of this, is the industrial base. We were losing the industrial base, not just in shipbuilding but in ship repair. And, obviously, one is generally the precursor of the other, but not necessarily. We wanted to make sure that we did not let our industrial base diminish. That means an industrial base that is spread up and down the littoral of the United States, to as many ports as we can effectively move our ships. This assumes that in wartime our ships have close proximity to these ports, whether they are in the Caribbean, the North Atlantic, the South Atlantic, the Northwest Pacific, or the South Pacific. This spreading out seemed to make a lot of sense to us.

We also looked at the idea of how many ships we can really jam in these existing ports, and do it effectively. After the war we had so many ships that we put them at anchor. We never want to go back to that again. That is a terrible load on our sailors, to put the ships at anchor. They then must steam. So, you then have to put the steaming costs into anchorage. That is not in the GAO report. By the time that you look at all the other aspects, the military aspects of strategic homeporting make a lot of sense.

Now, is it politically attractive? Of course. But that is the tail wagging the dog, in my opinion. That is somebody else's problem. Sure it is attractive politically, like everything else that we procure and we buy for the military in the various areas. Strategic homeporting is just one of them.

We are also sensitive to the vast investment we have made into the existing facilities. We didn't want in any way to degrade those facilities, or to take away things from present ports.

You can see from the balance sheet on the right of the photo, that there generally are pluses in all directions, except for presently overloaded ports. In our opinion, we have a situation where we want to get down to about 100 ships in San Diego, from the 118, and that is the only one we see needs an adjustment made. After all, we have the San Diego-Long Beach complex which is within driving range and competitive bid range for our SRA's, and so forth, so that seemed to make a lot of sense.

What you are seeing on this chart then, in aggregate, is the addition of five major strategic homeport areas: Everett, WA; San Francisco, with a restructured force in that region; the New York area; the Mobile-Pensacola area, which, after all, are all within a 40-mile radius, all one complex. And we have a major industrial capability there for depot level maintenance. We have a beautiful setup for training, and we have Pascagoula yards that can help us with the modern technology we have in those ships. And then the Galveston-Houston area that takes us further over to the East and gets us lined up for the Caribbean-SLOC issue, with Corpus Christi as another complex.

So here we have built a projected industrial base that is good for wartime. We have dispersed our ships so that all our eggs aren't in one basket. We have made the targeting problem more difficult for the Soviet Union. We have given the live together/fight together training concept a chance to survive. And we think we have done this in a very responsible way.

Now, what does it cost? The whole cost of this program is $1 billion; $650 million of which would be there whether we had strategic homeporting dispersal or not. We have to pay about that amount for the existing ports to upgrade them. The delta between, say, $1 billion and $650 million is the key issue, that is $350 million. But $150 million of that has been pledged by the States, and the regions, and the cities. They have been very forthcoming. That effectively leaves a $200 million delta. So we have only a 20-percent overhead charge on a $1 billion investment. With this we get the strategic advantage of moving these ships into a variety of ports, including the industrial base expansion. Tt seems to me, that it is worth half the price of a FFG–7 frigate to do it.

Mr. **Bennett**. That is the strongest case I have heard.

Mr. **Sisisky**. Mr. Chairman, I am not going to answer that, and I dare not do that right now.

I am looking forward, Admiral Watkins, to the report of the Navy in answering the GAO—and it would be wise if you wrote it—even though I could delineate line by line some of what you said, in my humble opinion—if that is worth anything, and I have never been to War College—you make a lot of sense. Everett, WA, there is no question about that. I cannot argue that.

But I could argue a lot of other points, and I will not do it now. But I am looking forward to the report.

You kind of scared me when you did say one thing, and I have got to get it in. And while both of you are here, if I may indulge on the committee for one moment. You talked about keeping the integrity of your battle groups together because you can do the training in port. You know what I am driving at.

I raise the issue of Warsaw Pact ships in port, for obvious reasons that I can't mention here, and I get a little frightened over that when you restrict that in some ports—and I think that these ports ought to know that if that takes place such as the Port of New York and other places—indeed, shipping may be restricted, or should be, let's put it that way. And maybe you can answer that.

Admiral **Watkins**. Yes; I think we have techniques to get around that, Mr. Sisisky. We can handle that with our——

Mr. **Bennett**. I would like you to answer that for the record, because I am intrigued by your thinking as well.

Admiral **Watkins**. We, too, have been concerned over the years. In fact, the Navy is in the forefront of objecting to certain ports being encroached upon by Soviet shipping coming in, bristling with their antennas, and the like.

On the other hand, knowing about this problem over the years, we have asked Congress, and you have authorized and funded a whole set of equipment to permit us to operate in a secure way. The Navy Tactical Data System and secure voice, allow us to follow the same procedures we would follow at sea. And they are behind us at sea, everywhere, AGI's, their surface ships, their subsurface ships, their airborne interceptors. So, I really don't see that if we are smart in the way we handle ourselves that the security situation is any different in port than it is at sea with the Soviet capabilities.

Mr. **Sisisky**. Then by your expression, our statement, would that mean that the ports that have restrictions on it could expect to receive——

Admiral **Watkins**. No, sir, because those restrictions are for very specific things, Mr. Sisisky, and I would not want to list them here. But I believe that some of that is actual physical proximity. That is a different matter. It is not just a matter of breezing by, or letting their antennas pick up, it is more than that. We would not want them to surround our forces which would demand more physical security.

It is already a problem for us, since we are undermanned and underfunded in physical security today. We don't need any more demands on ourselves. That is where, is really where, it gets touchy; it is a physical proximity problem as opposed to a close-in, but a somewhat distant electronics intercept capability that is critical.

Mr. Bateman.

Mr. **Bateman**. Thank you, Mr. Chairman.

First let me, too, add accommodation to that which has already been expressed to both the Secretary and to Admiral Watkins, especially since he will not be before us as often or as long in the future as we would like. Your watch has been a remarkable one in both cases. We are very proud of you.

I want to return to the matter that was just under discussion, and recognizing that it has a very large sensitivity, I don't want the answers now. But through the years in the part of the world that I come from, the Port of Hampton Roads, there has been an understanding, even while not knowing what it was all about, or why our port was restricted to certain of merchant traffic, to its very substantial economic detriment.

I would like for you to send someone to visit me, who is very knowledgeable on this so that as this issue is raised, and it has been raised, I guess, essentially in connection with the strategic homeporting decision, that if this is, indeed, a requirement of national security, that within the confines of not disclosing sensitive or classified matters, that I can state the case as to why it remains necessary, if it remains necessary, and to whatever extent it remains necessary.

Admiral **Watkins**. We will be pleased to do that.

Mr. **Bateman**. I would like for this to focus on some of the specific geography and components of the general Port of Hampton Roads.

Beyond that concern, Mr. Chairman, this afternoon I don't really have a lot of questions that I can ask.

I want to say that I, like those who have preceded me, would love to see the Congress proceeding from a measurement of threat, and what is necessary to meet a threat, and then structuring a national defense budget accordingly. Our job would be so much easier if we would just approach it in that more rational way.

I can't really ask you questions today about the things that it is most important for me to ask you about, because this committee has not had imposed upon it a budget resolution. We don't know where we are going to go. I have some remarkable strong trepidations that I am not going to like where we are going.

That then will be the occasion when some very hard questions and decisions have to be made, but until we are at that point, I don't want to contribute length to our meeting. I will look forward to our wrestling with this problem in the best way that we can.

I believe we will look forward to seeing the Secretary in Newport News on Saturday.

Mr. **Bennett**. Fine.

Mr. Dyson.

Mr. **Dyson**. Thank you, Mr. Chairman.

Mr. Secretary, I listened with a lot of interest to Mr. Spence's comments about the difficulty of getting carriers. I guess if one were to listen to that and watch us in the last couple of years, you would see how much easier it has been in getting one.

Anyway, I sent you a letter a couple of weeks ago recommending that last one be named after President Reagan. I got a couple of interesting comments. One newspaper editorialist wrote me a letter and said, he should die first. I didn't know how really to interpret that.

I wrote back and said, well, we named a building for Senator Humphrey before he died. We named one after Senator Hart before he died. I thought it would be very appropriate if we name the carrier after the President before he died. This is something I wish you would take into consideration.

Mr. **Bennett**. There has been some consideration.

Mr. **Dyson**. That is true. So we have broken that precedent many times. I also got an interesting note from someone in my district, that said that we ought to name it after battles. And I said, well, we are not engaging in too many of those these days, thank God.

Mr. **Bateman**. Mr. Chairman, would the gentleman yield?

Mr. **Dyson**. Yes.

Mr. **Bateman**. I hope he is not going to put me in the position of making draconian choices between President Reagan and President Thomas Jefferson.

Mr. **Dyson**. I think enough has been named after Jefferson.

Mr. **Bateman**. There has never been enough named after Jefferson.

Mr. **Dyson**. Now, Mr. Secretary, something a little more serious. I am not really sure I know what your position is on the Mariner Build-and-Charter Program. I heard the chairman's opening remarks mentioning that he had a question on the issue. It is of some concern to me, and before I am finished I am going to ask you to say, yes, or no.

To help you along I am going to re-read some of your testimony that you gave in the Senate, back on February 21. But before I do that, I would like to repeat something that the chairman of this committee, who has been on this committee a long, long time, said, and I think it is something worth listening to.

After Assistant Secretary Pyatt indicated to us that you all were opposing, the department was opposed to this, Chairman Bennett said that perhaps he anticipated an amendment being offered when we had the authorization bill to do just this sort of thing. It would be an easy thing to get passed since the appropriation, as you well know, offered by Senator Stevens was attached to the CR last year. In a sense, when it is already done, it makes it much easier for the Congress to accept it.

I think what Chairman Bennett was trying to say—if I can put words in Charlie's mouth—is that this is going to happen, we would like to have the Navy's help in putting some kind of legislation together. I think you know he would be carrying the ball as the floor manager at the time if this were to be offered. In a sense what you do is you put together a whole authorization, maybe in 25 minutes, and this man would have to react under an open rule to some proposal by any 1 of the 435 Members of the House, who would come forward and offer it. If we don't do it, I am seriously thinking about doing it myself.

Mr. **Bennett**. I think you have very well illustrated our problem. In other words, if I don't start mastering the thing to be a part of this team, somebody else is going to do it, and then I couldn't do it the best way to be done.

The chief concern I have is I don't want to see a lot of new ships tied up along the dock, and never used. That really disturbs me. I don't see anything in the existing language of this bill that protects against that. I am not quite sure what to do to change it.

But something ought to be done, so at least these ships are not going to be built to be just stored. I don't want that to happen, if I can help it.

In other words, the objective that he talked about, the Secretary talked about, was to see to it that these are ongoing ships with crews that are going to be available in time of war, and used in the Merchant Marine. That is what concerns me about the Mariner Program as it now stands, because I am not at all sure that any of them will get off the dock.

Mr. **Dyson**. I think what was of concern to Secretary Pyatt at the time is that we asked him, the subcommittee asked him to come in and, we, of course, had three bills there under discussion. But this chairman, as you well know, always wants to go in to recreate his own bill, and he does it quite well. But at the time Secretary Pyatt just seemed to just sort of close the door on all of that. That worries me. I think that is what provoked the chairman into offering his comment.

Anyway, as I said, on February 21st you appeared before the Senate Defense Appropriations Subcommittee, you said that you were in support of the Mariner build-and-charter program. I said, I have a copy of that here. If you would like me to read it, I will do it. I would like to offer part of it for the record.

[The following information was received for the record:]

EXCERPTS FROM SENATE DEFENSE SUBCOMMITTEE TRANSCRIPT FEB. 21, 1986

Senator **Stevens**. One of the subjects that is close to my heart is the problem of Sealift. I was very disturbed of the reports that came to us at the time of the Grenada exercise that we had trouble locating troop ships and as we looked into it further we really don't have the sealift projected for our forces and I have been trying to find a way to get the Congress to react to that need. Can we look forward to any help this year from the Navy. I know you personally have helped Mr. Secretary, and you too Admiral Watkins. Officially, are you going to be able to give us any help in trying to meet this Sealift deficit in our projected planning for the need for the Navy?

Secretary **Lehman**. Mr. Chairman, we have made clear and will renew the vigor of our efforts to get a wider appreciation within the administration and OMB of the need for making real progress in our Strategic Sealift requirements. As you know, I personally have supported and think it is a wise allocation of cost savings—the initiative that you put together last year which has been appropriated and hopefully will be authorized to use this cost savings to begin the mariner program and hopefully we will see progress and a wider appreciation of that approach. We have made progress in the RRF as you know, again thanks to your initiative in providing the appropriations that have enabled us with just one purchase $203M to procure all of the lift contained in the 8 SL-7 ships which in itself was an excellent initiative, taking advantage of the buyer's market with good modern ships we have picked up 17 ships which that can lift an entire Army division with all of its equipment and that was done with just $203M dollars. We appreciate your initiative and help in getting that approved.

Again, as I indicated Secretary Pyatt came in and said the opposite. If you could today, sort of clarify what is the Department of Defense's position on the build-and-charter program?

Secretary **Lehman**. Well, as you know consistency is the hobgoblin of little minds, Mr. Dyson.

Mr. **Dyson**. I have used that before myself, Mr. Secretary.

Mr. **Bennett**. So did Emerson, once.

Secretary **Lehman**. I support what I said before the Senate; I have said pretty much the same thing today. As the President did not include the Mariner Program in his budget, I am not in a position to give official support to it.

What I did before the Senate Appropriations Committee was to outline the merits that we saw in the program. Needless to say, rather than see those savings disappear, we would much prefer that they be used for something that is a real national requirement, like the merchant fleet. And, new ships of militarily useful design that are manned by American sailors helping to keep the merchant marine profession alive, are attractive.

The negatives are those that I mentioned earlier. We don't like the principle of transferring subsidies from the former programs in MARAD in the Transportation Department to the Department of Defense. While this is a one time deal, of course, and need not be a precedent, it could become one.

Mr. **Bennett**. Well, you suggested one possible amendment which would be agreeable with me, which is stopping this in the future. It would be terribly embarrassing to have the Appropriations Committee tell this committee what to do.

So I think before I would approve the Mariner Program coming out of this committee, you all can do what you want to about, I really would not like to see this as a precedent. Therefore, I would like to have language in the bill that says that this is a one-shot proposition here, after which we are going to regrasp our responsibilities for authorization.

Another thing that is suggested and what has come up here is the possibility of having some language of maybe liquidated damages, if the corporation is going to ask for these ships to be built and agrees to use them, that if they are actually not used within a certain period of time or something that some damage will be paid by the corporation, like for others it will prove disastrous to build that ship, that if they don't ever actually use them that they are going to have to pay something to the Federal Government to recompense a little bit for the Federal dollars that went in.

My chief concern is the fact that I don't want to have these built just for the shipbuilding concerns. I have a lot of shipbuilding in my district, and I would just love to hand them some big opportunity, but it ought to be logical with regard to the overall budget. And therefore, I would like to see that these ships were actually used. And liquidated damages is a possibility.

That is the sort of thing, Mr. Secretary—I don't know if you probably couldn't do it here off the top of your head, but in the remaining days that we have available here, if we could have somebody on your staff think about the Mariner Program, and see if there are some things in it, that if it is going to pass anyway, that you would like to see protect the Treasury and protect the Navy, and protect the process; not the things that you necessarily approve of, but to make it better than it now is, we certainly would appreciate it. Because, in my opinion, the Mariner Program is going to pass.

Mr. DYSON. Mr. Chairman, I couldn't agree more with you. But having ships and having them tied up, I think it is absolutely that if that industrial base is not protected.

Mr. Secretary, I have been listening to you sing that song now for 6 years. And I agree with you; I endorse it; now we have got an opportunity given to us by Senator Stevens to do this sort of thing.

I would like to ask you one other question, and I am sure the chairman would indulge me, because so many people have used my time.

Mr. BENNETT. Including the chairman.

Mr. DYSON. Including the chairman.

It is always welcome to have your 2 cents, Mr. Chairman.

With the situation in South Africa, and also the situation in New Zealand, Australia, and those areas, those very sensitive areas, I have been asked to ask you, can you protect our sea-lanes in these places that I just mentioned, if we were ever to go to war?

Secretary LEHMAN. With the 600-ship Navy which we will have by 1989, yes, we will.

Mr. DYSON. We can't pull in—you know the New Zealanders are asking for a nuclear free zone. I don't know what is going to ultimately happen in South Africa.

Secretary LEHMAN. Well, given the current political situation and the new political balance that we have today, we believe that we can, defend those sea lanes, assuming, of course, that national decisions are made in a timely fashion, and that our allies continue to hold up their end and continue to provide the very substantial naval forces that they have been providing.

Mr. DYSON. I would like to state publicly, it is my understanding that the Secretary of Defense is going down there some time toward the end—at least Australia—some time toward the end of April.

I would just like to publicly wish him well. I think he has got his work cut out for him.

Mr. BENNETT. General Blaz.

General BLAZ. Thank you, Mr. Chairman.

Let me just start by saying, I wish to associate myself with the complimentary remarks that were extended your way. I haven't been here very long, so I can't cite some of the instances in the past. But I have worked for all three of you, so I probably know you all more than most people here.

I do have a question, sir, if I may. I wasn't going to bring up the homeporting issue, by the way, I see the territory of Guam is not on it, so it is not a popular discussion of this one.

Perhaps, Mr. Secretary, I will address it to you. It has to do with the situation in the Philippines which has, I think, punctuated the problem of frugality when we invest so much in a country that is so long an ally, and now we are faced with this prospect with having renegotiation in 5 years. The thing that kind of bothers me personally is that the prospect of renegotiating in a few years, and such short a period for 5 years, and dumping so much money, it seems to me somewhere along the line we ought to have some very strong words directed at some of some of these negotiators to look for something greater than 5 years, maybe a 15 or 20 or so, where we can really depend on it.

Assuming, however, that we are unsuccessful, it distresses me somewhat when I hear people say that what we need to do is to find alternate sites, or replacement sites, or sites where we could possibly duplicate what we have at Clark and Subic.

It distresses me for this reason, that were we to loose Clark and Subic the question then is not, would not be replacement; the question would be an entirely new strategy; an entirely new policy; an entirely new dimension of problems, interests, not into the American world, but into the whole world's world. I wonder if you share this observation, sir, because it is so prevalent to hear people—and you know that parochially I would want to say why not go on, because it would mean so much so to us. The question, as the chairman has indicated in his own shipbuilding comments regarding the greater issue, the greater issue here is the Nation's interest.

So taking a side walk for the moment, do you share that thought that we should be looking for something by way of a strategy rather than a duplication?

Secretary Lehman. I would like to associate myself with your description of the issue. There is no issue to Clark and Subic.

What would result from our departure from those bases, would be a very different, and less attractive strategic balance in the Western Pacific, no matter how well we did in replacing them. Regardless of what other bases we built up elsewhere, at enormous investment I might add, they would not be substitutes.

I think that Admiral Watkins, as a former Pacific Fleet Commander, might talk more directly to the military impact.

Admiral Watkins. We are often asked the question, aren't you studying alternatives, isn't this your responsibility? And, of course, the answer is, yes. We have looked at alternatives to the bases in the Philippines now for 20 years that I can recall. In fact, many of the negotiations with the Southern Pacific Islands, the Micronesian Islands and, so forth, are always predicated on a mutual security concept. This is always in the back of our minds.

But as the Secretary has pointed out, the danger of talking about an alternative in Tinian, Saipan, and Guam, Palau complex, is that immediately people begin to focus on that as a real alternative. That is the danger of talking it that way.

That is why we are very hesitant to talk about contingency plans to move out. Because, as the Secretary pointed out, there isn't any way that we can move 500 miles to the east and give anything but aid and comfort to the Soviets, who have just put in their first brigade of naval infantry in barracks at Cam Ranh Bay. They have over 40 reconnaissance, and combat aircraft there now, with nuclear submarines, surface ships, repair capability, and major infrastructure making it the largest extraterritorial piece of property that they own in the world, where they are in full charge.

They are sitting right astride the SLOC which supply 84 percent of all the Japanese lifeblood, for example. Twenty-six percent of all of our imported goods delivered by ship to the United States come via that route. All of the sea interchange, between Australia and Japan, arrives via the South China Sea. All the stuff coming in through the Indonesian Straits and the Straits of Malacca, comes through the South China Sea. So, to walk away from the ASEAN region, if you will, and leave the Soviets well-implanted, would change the strategic picture irrespective of a base 500 miles to the east.

We don't see that as a suitable discussion point right now, particularly with the turn of events in the Philippines. Our object now is to help stabilize the situation there, help support the government of the Philippines. People will start flowing in there to try to provide the support and underpinnings needed to stabilize the situation, and then to move out from that point with a new concept arranged with the president. That should be our goal.

Until such time as we are forced to do something else, I think we should be very careful before we casually talk about alternatives.

I was asked the other night on television, why don't you just go into Japan. It is very presumptuous of us in the United States to say that we are going to move two big bases into Japan. No way is that going to happen. We would not even want to raise those kinds of issues.

So there is not a strategic alternative that is acceptable from a military point of view. Obviously, you do what you have to do at the time. But that doesn't make it a simple one-to-one offset.

General **Blaz**. This is really very reassuring to me. I thank you for your very kind comments.

Mr. **Bennett**. Mr. Ortiz.

Mr. **Ortiz**. Thank you, Mr. Chairman.

I would just like to compliment Admiral Watkins for his tremendous argument, and it was very convincing.

Talking about saving and money, and I was just thinking of my State and, I guess, throughout the United States, the price of oil has gone down. Can you give us an estimate as to how much money you will save because of the savings now?

In my State, I know a gallon of gasoline and diesel have gone down somewhat, and in some cases up to 40 cents a gallon. I don't have the slightest idea how many fields you use.

Secretary **Lehman**. I would be happy to provide that for the record. The yearly savings would be most significant just for the steaming time that is saved in deployments to the Central American region.

[The following information was received for the record:]

OIL PRICES

The recent drop in world petroleum prices has reduced the cost of petroleum products consumed by the Navy. However, the Navy buys virtually all of its petroleum products from the Defense Logistics Agency (DLA) at stabilized prices set by DLA. No savings have been passed on to the services, however Congress has made some offsetting budget adjustments as a result of oil price cuts.

Mr. **Ortiz**. And I think that the dispersal of the fleet makes a lot of sense. I would like to compliment you in the selection of Corpus Christi, of course, was very wise; congratulations.

Thank you, Mr. Chairman, I don't have any further questions to ask.

Mr. **Bennett**. Mr. Hunter.

Mr. **Hunter**. Thank you, Mr. Chairman, gentlemen, it is good to be with you today.

Admiral Watkins thank you for your service to the country. I think you have done a great deal in helping to bring the Soviets to the bargaining table. Part of that inducement, I think, was what you have done in rebuilding America's Navy.

Let me ask you a couple of questions about minesweepers. How many minesweepers do we have attached to New York right now, stationed in New York; do we have any?

Secretary **Lehman**. None of them are assigned up there, but we instituted the COOP program.

Admiral **Watkins**. We don't have any minesweepers homeported there, as I recall. We have instituted the cooperative program, however, the COOP program, in that region, as one of the cost-effective offsets for not having enough of the minesweepers around. We are doing that all up and down both coasts.

Mr. **Hunter**. What does that mean to New York?

Admiral **Watkins**. This means, specifically, that we are finding the ships that are suitable for implantation of our mine locating equipment, so that we can use these ships in time of national emergency. We make arrangements with the owners, to put that equipment aboard and dedicate that ship to the mine port clearing operations.

We are doing this in concert with the Coast Guard in our maritime defense zone concept. This is just getting off the ground and, I think, it is going to be a very successful program. And we are trying to get our allies, where they are having the same kinds of problems, to use the various trollers, the nonmagnetic ships that are already in the inventory, some of them quite large, that can take this equipment and do a very fine job. And then we want to be able to train periodically to do this. So that will be written into the contract with COOP ships.

Mr. **Hunter**. Is that going to eliminate the need for the 31 additional minesweepers that you spoke of?

Admiral **Watkins**. No, sir, these COOP vessels will have very limited use. They will not have the sea-keeping characteristics to move far out of the ports. But the vessels will be able to do some of the local work that is absolutely essential to insure that we have safe transit routes for the inbound and outbound ships.

Mr. **Hunter**. Well, I guess my point is that in questioning Senator D'Amato, and Senator Moynihan, in their testimony before the Subcommittee on Military Construction on strategic homeporting, they said very clearly that they wanted to have, by gosh, some minesweepers to go along with their naval vessels, to allow them to escape to deep water in time. That is one reason we have this dispersal plan, so that ships can escape and can be effective.

I notice that we only have about 21 minesweepers in the inventory right now, three active, 18 reserves, basically 1950's vintage. I think that it would be very candid of the Navy, and accurate and reflective of the true cost of strategic homeporting, which may be a pretty good idea, to include the costs of the minesweepers that are going to be necessary at these new strategic homeports, because these Congressmen and Senators who represent these areas aren't going to want naked homeports. They are going to want, by gosh, along with their several ships, or several dozen ships, some minesweepers that can allow these ships to escape to the sea.

As I understand it the MCM is close to $100 million in cost. I guess my point is that if you do what Senator Moynihan and Senator D'Amato want, which is to get them some minesweepers now to protect these new Navy ships they have got, you are looking at—if you have three minesweepers in that harbor, that is $300 million, assuming that you use the more expensive model.

Is there another way that we can do this without spending that money?

Secretary LEHMAN. Yes; the fact is, that when we put together our plan for the 31 MSH's and MCM's, all of those ports, Puget Sound, New York, etc., were part of the requirements that those 31 ships were to meet.

The sole exception, of Lake Charles, was not in our plan, and because of that we have assigned a COOP ship to Lake Charles.

Because the minesweepers have to clear not just the military ports, but the main ports of entry, in the Gulf, in New York, Puget Sound, and San Francisco, as well adding the military ships doesn't add a new minesweeping requirement. Thirty-one was the number arrived at to do the national mine clearing that is necessary. In addition to those 31 which do the toughest jobs, the immediate jobs, the Coast Guard has quite a number of ships assigned to harbor security, and harbor clearing in those areas.

On top of that, we added the COOP program to further thicken the capability for those ships. But, the new homeports, with the one exception of Lake Charles, do not add any new minesweeping requirements.

Mr. HUNTER. Well, I think that perhaps, my point then, Mr. Secretary, which is simply that if you are talking—we haven't built these ships, they are on paper, right—the point is that you considered the new homeports when you put the plan together. Now, if you were to say, well, we would have put these things up there to protect commercial ships anyway, that may be accurate that you would put them in your plan, and it might be on our wish list. But historically, and probably for that reason, if, in fact, these minesweepers are largely to protect non-military installations, they have fallen through the budget that we have, and the Navy has not been very strong in trying to support, as you recall with the exchanges with Mr. Hartnett, the request for those minesweepers.

So, I guess my point is minesweepers were put in this plan with the intention that they be assigned to these places to protect, in part, to free up these ships that are going to new ports. And very probably they would never have been funded, or never would be funded, simply to protect a completely non-military installation, that will now be, because of strategic homeporting, a military installation.

So my argument is, I guess, or my point is, that those minesweepers, those three minesweepers that Senator D'Amato and Senator Moynihan are now going to demand to protect their new Navy ships that you are going to give them, are a very real part of the cost of strategic homeporting.

Secretary LEHMAN. No; I disagree, Congressman. Because those ports, as I say, have to be cleared anyway. It is not a "nice to have" anymore than a merchant marine is "nice to have."

We have had abundant testimony that we need to be concerned about our merchant marine. It goes without saying, that the merchant marine has to be able to sail. New York Harbor has to be cleared. That is one of the reasons why we're buying MCM's and MSH's.

Now, I agree that the Navy, historically, has been a bit remiss in the priorities it has placed on 19——

Mr. **Hunter**. With these vintage, those minesweepers that we have.

Secretary **Lehman**. That is right.

The current MCM program is the shipbuilding program of which we are the least proud in the management performance of both the Navy and the contractor. And, we agree that we need to do better than we have over the past decade in mine sweeping.

I disagree completely that there will be any change, up or down, in the requirement and the cost of the minesweeping we must have for our harbors, whether or not naval ships are in them.

Mr. **Hunter**. OK; thank you.

Mr. Chairman, if you could indulge just one followup on this.

I would assume then, Mr. Secretary, that when we get down to the budget crunch, because the paper numbers that we have now for minesweepers also presume some very healthy increased in naval spending, that most of us on this panel want to see, but probably are not going to be a reality.

I would assume then from your testimony that in the prioritization that is probably going to take place, that you are going to urge that those minesweepers be given the same prioritization as attack submarines and surface combatants.

Secretary **Lehman**. Let me state for the record, that I agree with you completely. We have already lost too much time in getting those minesweepers to the fleet. They have as high a priority as any other ship today.

Thank you, Mr. Chairman.

Mr. **Bennett**. Mr. Carney.

Mr. **Carney**. Thank you.

I would like to take this opportunity to do two things. One, of course, is to congratulate Admiral Watkins for a fine career and thank him for the fine job he has done for our Nation.

The second thing is I would like to invite my colleague who is sitting to my immediate right to come up and look at New York Harbor. A quick look at New York Harbor would alleviate all this apprehensions about the minesweeping problem.

I think, too, we have to look at the mine sweeping problem from a Soviet thought, too. When we spread our assets around, and we don't put them all in the same basket, they have a greater problem setting up additional mine fields to chock off your assets, the naval assets.

So that is something that they have to address. And, of course, making their operations more complicated, in and of itself, is a successful operation on the part of the Navy.

Also, too, if you look at New York Harbor, you quickly see that without getting into the facilities that they own, where we do so much of our refinery work for our petroleum assets, you would see that the Northeast part of the United States would close up very rapidly.

The total amount of contribution it makes to the Defense Department efforts would make it obvious to all, you could not allow that area, those oil refineries to be closed down, they are a vital part of our defense effort.

Also, too, if the gentleman would come he would see how close they are in proximity to Newport and to Groton facilities, and we have our submarine facilities there, very concerned about that.

We are very concerned about keeping them free of the mine fields. And that is about 25 minutes steaming time from the New York Harbor. And I am sure we could swing them through the Long Island Sound up the East River, clean the harbor in no time at all.

Mr. HUNTER. I have been there at your fundraiser.

Mr. CARNEY. Well, you were there at night; and I flew you in on a plane.

I would also like to not only commend you, Admiral, for your 35 years of service, but for your great presentation today on the importance of spreading out the fleet. As my colleague from Texas noted, it was quite clear and concise, and right to the point.

I don't have a homeport; I don't have a deep port. So I am not looking at this from parochial standpoint. I am looking at this from a standpoint of being a great American and concerned about having an effective fighting force.

Mr. HUNTER. We were worried.

Mr. CARNEY. I thought you might have been.

Also, I might want to add that since we had our hearings on the build and charter for the merchant marine, it has come to my attention that, one, the Navy has a problem with handy-size tankers. That is the most immediate problem from the tanker report that just came out.

Two, that there are at least half dozen handy-size tankers that are American built, that are not being utilized at all today. These are ships that are not only handy-size, but they have been built in the last 10 years, their speed requirement to work with the Navy can be met.

I am sure they could be had for a bargain, bargain basement price; that might be something you might want to look at.

Secretary LEHMAN. That is our intention.

Mr. CARNEY. I think that would be a wise move to do. It takes care of an immediate problem.

But then, we, in the Merchant Marine Committee, the chairman and myself, have concerns about having the capable people available to crew the ships and the Merchant Marine Reserve fleet. We are going to have to look into that.

I was somewhat distressed to hear from the Department of Transportation that they felt they would get the crews from Navy Reserve. It has always been my opinion that the Naval Reserve crews would be needed for naval operations and not merchant marine operations.

I would hope that you would look carefully at those options of available handy-sized tankers. We need other ships. I am not saying that the build and charter concept is not one that deserves an awful lot of merit.

But a handy size, immediate problem, you might have a solution out there today.

Mr. Chairman, I don't have anything more to say. I don't have any questions of the Secretary or the CNO.

I would like to conclude by, again, congratulating Admiral Watkins. It has been a delight for me to deal with you in your tenure as CINCPAC and CNO.

Thank you.

Mr. BENNETT. Before I call Mr. Price, I have some questions he would like to state.

Of course, we are all very deeply grateful to Mr. Hartnett and what he has done with regard to the mine operations. And we may have some legislative thing about or in connection with his work in this bill.

But if we don't, I would like to suggest to the Secretary of the Navy the next time you christen or commission a vessel in that field, that you might think about calling on him and his wife to do the honors for it, because he has made a very real contribution. He is leaving Congress; we are all going to miss him.

I would just like to tip my hat to him. I know the committee would like to tip our hat to him for his perseverance in this field.

Next, Mr. Price, do you have any questions?

Mr. PRICE. I have no questions.

Mr. BENNETT. Then, we want to thank you, Mr. Secretary, and all three for your great contributions, and particularly Admiral Watkins, who may or may not come back in the future specifically before the committee. You have all rendered a very wonderful service.

We are not in a position right now to mark up this bill. We are close to marking it up, but there are other budgetary things that override it. So we are not going to be able to mark it up today.

Unless there is somebody else who has any questions to ask at this point, we will adjourn.

[Whereupon, at 3:05 p.m., the hearing adjourned.]

NAVY RESERVE FRIGATE ASW PROGRAM

House of Representatives,
Committee on Armed Services,
Seapower and Strategic and
Critical Materials Subcommittee,
Washington, DC, Tuesday, June 10, 1986.

The subcommittee met, pursuant to call, in room 2212, Rayburn House Office Building, Hon. Charles E. Bennett (chairman of the subcommittee) presiding.

STATEMENT OF HON. CHARLES E. BENNETT, A REPRESENTATIVE FROM FLORIDA, CHAIRMAN, SEAPOWER AND STRATEGIC AND CRITICAL MATERIALS SUBCOMMITTEE

Mr. Bennett. The subcommittee will come to order.

Today's hearing of the Seapower Subcommittee will first address the current and future antisubmarine warfare capabilities of Naval Reserve force frigates. Later we will discuss another issue, the possible conversion of Poseidon submarines.

The Navy asked for this hearing to discuss its revised plans for equipping Naval Reserve frigates with towed array sonars and the shipboard electronics that go with them.

Antisubmarine warfare is, of course, a subject of great interest to this committee. Earlier this year the committee received a fine presentation on the Navy's antisubmarine warfare master plan. Two of the major thrusts made by the Navy were that Soviet submarines are becoming a lot quieter more quickly than anticipated and that new equipment and tactics could help the Navy to maintain its current lead in ASW. The Navy's modified plan would expand the number of Naval Reserve Frigates to be equipped with the newest and most sophisticated surface ASW equipment.

But because this more sophisticated equipment is also more expensive, the subcommittee needs to know if the added capability is worth the increase in cost in light of the tight budget situation we are in this year and will probably be in for the foreseeable future.

In addition, I have asked Admiral Metcalf to address specifically a suggestion that came to me from Congressman Dyson, a member of the subcommittee; Congressman Chappell; and Congressman Roe. These members wrote to me and recommended that the committee provide additional funds to buy ASW equipment for the Naval Reserve frigates. Although the equipment proposed would be an improvement over similar units on these ships now, the equipment, if bought, would not be compatible with the new and more capable system the Navy is now planning to buy because of the superior nature of the new system. Because of their interest in the matter, I wrote to each of these members and invited them to testify today.

Testifying before the committee today is Vice Adm. Joseph Metcalf, Deputy Chief of Naval Operations for Surface Warfare. So we will now hear from Admiral Metcalf.

STATEMENT OF VICE ADM. JOSEPH METCALF III, DEPUTY CHIEF OF NAVAL OPERATION, SURFACE WARFARE

Admiral METCALF. Thank you, Mr. Chairman.

First, I request that my statement be entered in the record.

Mr. BENNETT. Without objection the whole statement will be there.

Admiral METCALF. It is not long. I am proud of it. It is one of the shortest statements on record. I think I ought to point that out.

Mr. BENNETT. All right.

Admiral METCALF. It is right to the point because the issue is the Naval Reserve. I would like to read part of it, because it gets to the nub of what we are talking about.

Our Naval Reserve Force FFG 7 frigates will perform the same wartime mission against the same threat as active fleet units. The advanced nature of the threat allows the Navy no option other than equipping all of its modern frigate force, including the 18 of the 51 FFG 7 class ships which will be assigned to the Naval Reserve Force, with the most modern and capable ASW combat system available.

That is really the nub of the whole thing. One of the issues here, of course, is why did we make this change? Can we deliver a system which we say will do the job? And can we afford it? I think those are the three elements. You alluded to each of those in your statement.

Why the change? Well, there are a number of changes. It goes back into history and my association with the Naval Reserve, particularly the frigate program. When I came into the job that I am in right now, I was determined to do something about it. The more I looked into it, the more imperative the issue became, because one-third of the best ASW ships we have are FFG–7's. These modern ships, which will be around into the next century, are in the Naval Reserve.

I said to myself, we are going to have active sailors aboard those ships, they are going to be commanded by very good people and they are going to have an enormous responsibility. We cannot afford to have frigates of any kind, particularly the modern ones, which are not as good as the active frigates of the same class. This is particularly true of the FFG–7. So I was determined that I would sell this to my community.

Let's face it; this is a policy change, I have been working on it for 2 years. You can understand policy changes aren't things which come about easily. So I have sold it to the senior members of my community, which is the surface warfare community, as well as the younger admirals who are coming along and are going to sustain this.

So the idea that we will have Naval Reserve Frigates, which are mirror images—I have coined the term mirror image—policy of the active force, has been implemented in their policy. Mirror image means that, to the extent possible, when we modernize an active ship, we will modernize a reserve ship and do it in the same proportion. For the FFG-7, this means there will be approximately two times as many ASW ships in the active force as there will be in the reserve, so that when we modernize two active ships, we will modernize one reserve ship. That is fundamental policy, which is to make those two elements of our frigate force the same. That is the key.

This policy was driven by two things: First, FFG-7's are modern ships, and second, the threat is evolving. We cannot afford to have a second class ASW force in the reserve because when the whistle blows, they are going to have to answer and when they answer they have to be ready to go. So that is the fundamental reason behind it.

The next issue is—can we deliver the system? Of course we can deliver the system. I would like to deliver it faster than we are going to be able to do it, but the blocks are all in place, particularly the policy blocks, which would turn this thing around. I think we are ready to march off.

Can we afford it? I will discuss that in some detail.

Now, could I have the first slide.

Mr. BENNETT. I must say, before we get into that, I must say how I got involved in this. A number of people, Bill Chappell and other Members of Congress had asked me about some not very staggering amount of money—$15 million or something like that—to perfect the Reserve ship capability. When I got that letter I said to myself, well, $15 million to put the Reserve in a proper status is a thing that I believe I can agree to. I can say that is not a large amount of money, it is to try to help the Reserve. So I wrote back a letter and told them essentially I felt like that is something we can probably swallow; we can get the money from somewhere else. And so I gave them an affirmative answer.

Then I discovered that the Navy—at least part of the Navy—was not too keen about that, and I gathered it was not too keen about it not because of the money, which is not much money, but because of the desire to have a different type of system. So the question that I have got to kind of resolve myself with regard to the Members of Congress is whether or not what they are asking is better handled by what the Navy wants to do and are we going to be able to fund that. Is it going to be much more expensive? Or if I do what the Navy wants to do, would I be denying the reservists what they really should have?

You understand my problem?

Admiral METCALF. Yes.

Mr. BENNETT. I told the people, fine, $15 million doesn't bother me. I didn't realize the Navy had some feelings about whether they wanted to put what they might consider to be inferior equipment on——

Admiral METCALF. That is right. We consider it to be——

Mr. BENNETT. I don't want to be in the position of saying to them, if I can help it, the Navy wants to get better equipment but they have no intention of buying it.

Admiral **Metcalf**. Oh, no, that is the point I have tried to get across, because part of the issue here is that the Navy has no intention of buying it.

Now, this goes back into years of suspicion that we have not kept, particularly the surface reserve ships, up to snuff. We absolutely intend to keep the surface——

Mr. **Bennett**. Apparently it was not more money was needed to buy this?

Admiral **Metcalf**. I will get into it, but to make it——

Mr. **Bennett**. You needed an authorization for it and they would never come to our committee. Should we give them this authorization?

Admiral **Metcalf**. In my judgment, no sir.

Mr. **Bennett**. Do you intend to——

Admiral **Metcalf**. I will tend to that. If you will give me a second and let me go through this, I will demonstrate. This is just a general statement.

FRIGATE ASW MODERNIZATION

New Soviet general purpose nuclear-powered submarines characterized by significant quieting, new weapons, and new sensors, pose a formidable challenge to Western Naval Forces.—Soviet Military Power 1986 (Fifth Edition).

Compared to U.S. submarines, the Soviets are narrowing our lead in antisubmarine sensors and weapons capabilities, as well as submarine quieting techniques, while maintaining their advantages in speed and diving capability.—Understanding Soviet Naval Developments (Fifth Edition).

The Soviets have gone on a program to get quieter submarines as mentioned in the statement. The Soviets are narrowing the lead which the U.S. enjoys. In essence, what we are looking at is that the Soviets have indeed accomplished or are in the process of getting their submarines quieter.

FRIGATE MODERNIZATION

Driven by The Threat/Maritime Strategy.

Identified as a ship class problem—FF-1052 Knox Class; FFG-7 Oliver Hazard Perry Class.

Linked to force level considerations—one third of modern frigates in NRF; Adequate ASW Forces.

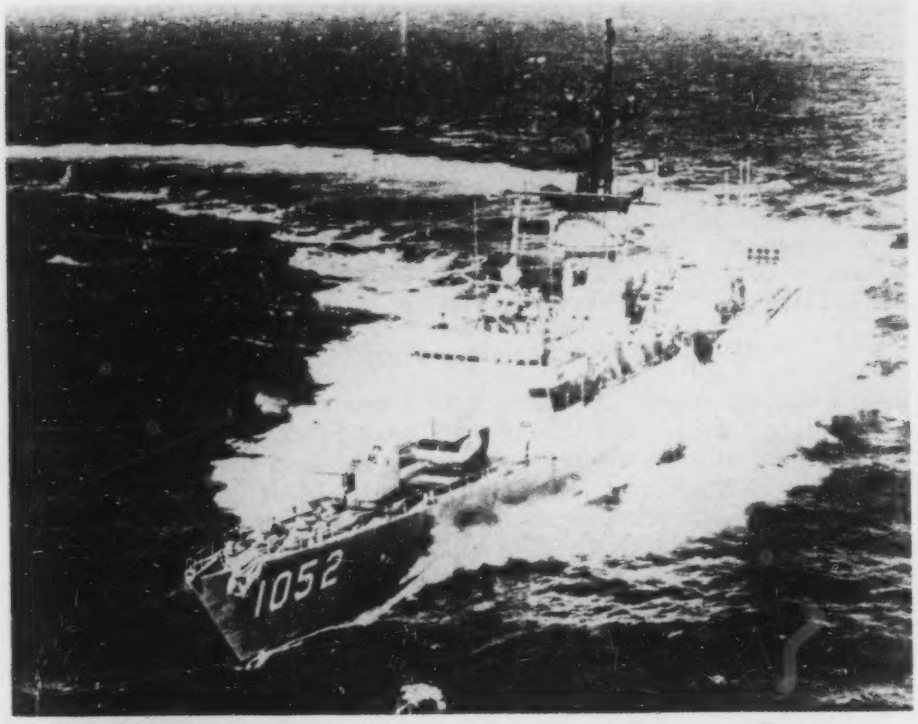
Now, the frigate modernization, which is a program we have been supporting is driven by the threat and by our maritime strategy, and we identify it as a ship class problem. There are two classes. There are the FF-1052 Knox, and the FFG-7, Oliver Hazard Perry classes, and their modernization is linked to the force level considerations. One-third of our modern frigates will be Naval Reserve Frigates.

Here is a picture of the FF-1052, which has been around for a while, and here is a picture of the FFG-7, a very fine gas turbine driven ASW ship.

BACKGROUND

Previous installation plans—SQQ-89, active fleet FFG-7's—SQR-18A (V) ½ and SQR-17A, FF-1052 class, NRF FFG-7'S.

Revised installation plans—SQQ-89, all FFG-7's—SQR-18A (V) ½ and SQR-17A—remains applicable to FF-1052 class.



Now, we had previously planned to put the SQQ-89 on the FFG-7's in the active fleet. The SQQ-89 is the preferred system. We had originally intended to put the SQR-18A(V2) and the SQR-17 Alfa in the Reserve ships.

That is when I arrived on the scene and I said we can't do that because the threat has increased, so our revised plans are to do the following: Put the SQQ-89s, the best system we have got, on the FFG-7s, and the SQQ-18A (V1) and (V2) on the FF-1052s, both active and reserve. That is the change. That is the change we are talking about.

Why do we want that? Why do we want to put the SQQ-89 system on instead of the SQR-18 with the SQR-17 processors?

WHY SQQ-89

Well, improved performance. It is not a small improvement; it is an enormous improvement. If we want to get into some of the figures we have to go into a closed session. You will have to go on faith, that is what it is.

So, The SQQ-89 provides longer detection ranges, and other advantages, such as the ability to manage multiple constants. All our ASW fellows know this. You may have only one submarine that is real, but you have a whole lot of false contacts out there. The SQQ-89 allows you to keep track of up to 99 of these things. Very often it means a difference of whether you get a submarine or don't get a submarine.

What we are talking about with the SQQ-89 is an order of magnitude improvement. The SQQ-89 provides interoperability with the LAMPS III. SQQ-89 can do that.

CONSIDERATION

Perhaps the most important issue from a financial aspect, which is a logistics world, is this business called Navy standard building blocks. That means computers, processors, and displays. They will be the same displays that we have on the *Arleigh Burke* destroyers, on the CG-47 cruisers, and all our new ships.

Further then, the SQQ-89 is capable of additional improvements. In other words, it is a modern system, which we can improve. Of course, the mirror image policy will allow us to more effectively train people as well as to give us an enormous amount of operational flexibility. So the SQQ-89 system is clearly the best one we have ever built.

SQQ-89 INSTALLATION

With respect to installation, we are going to divert the SQQ-89 system from the active fleet to reserve units. We will start doing that in fiscal year 1988. I would do it sooner, but it is a design problem. We have to get the designs for the particular system. They are done at Long Beach. It is a matter of making the designs for putting the systems on those ships. In 1988 is when we plan to do that. That is when we want to install them in 1988. From then on we will maintain two installations per year.

Now, here is the——

Mr. **Bennett**. What you are saying then is there is going to be a delay. These Congressmen that want to go ahead with the older system, your argument against them is that it is going to be delayed.

Admiral **Metcalf**. We are going to get a much better piece of equipment. We are going to get a piece of equipment that will do the job, which will find the modern submarines and we will work with this——

Mr. **Bennett**. Is there more to it than that?

Mr. **Schafer**. I might suggest that even if we were to put an add-on to buy SQR-18 systems in the fiscal year 1987 budget, by the time those were procured, they would actually be installed before fiscal year 1988.

Admiral **Metcalf**. That is right.

Mr. **Schafer**. So the timeframe is not really the issue here, the issue is capability, not timeframe.

Admiral **Metcalf**. See what I am going to do——

Mr. **Bennett**. You are going to put the better equipment on at the same time that you will be——

Admiral **Metcalf**. Yes sir.

Mr. **Bennett**. You won't save any time?

Admiral **Metcalf**. No sir.

Mr. **Bennett**. That argument won't stand up?

Admiral **Metcalf**. No sir.

Mr. **Bennett**. How about the dollar argument?

Admiral **Metcalf**. The dollar argument, we will get to that. The dollar argument always finds a way to the back of these slides, after we have persuaded you.

Mr. **Bennett**. I have this embarrassment of these members of Congress. I thought they weren't asking for very much. I want to be sure that the committee won't do something that is knocking out something that they have valid reason to support.

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Admiral **Metcalf**. This aircraft is part of the picture in reserve ASW capability. This is the LAMPS I upgrade aircraft. We are going to put LAMPS I on the reserve FFG-7's.

Could I go to the summary?

LAMPS MK I UPGRADE

Significant improvement in ASW capability—T-700 engines; on board acoustic processor; TACNAV to TACNAV data link; 99 channel sonobuoy receiver.

Focus of this upgrade is on NRF lamps squadrons—parallels FFG-7 ASW modernization; maintains FFG-7/lamps upgrade within affordable levels.

SUMMARY

Cost of SQQ-89 installation approximately twice as much as SQR-18(A) V2 ($20.7M vs $9.5M).

Increase in ASW warfighting capability enhanced by a factor significantly greater than 2X.

Installation of any system less capable than SQQ-89 is not cost effective in view of mission requirements over the expected service life of the FFG-7's.

Here is where we get a comparison. This is the nub of the issue right here. The first line, the cost of an SQQ–89 system is roughly twice the cost of SQR–18A(V2). But you are buying a system, the SQQ–89, of significant difference in performance, significant difference in our ability to support them, significant difference in how they would be used by fleet commanders and, as the threat evolves, our ability to improve the SQQ–89 is greater than the SQR–18A.

Now, there is a legitimate question which you can ask us. Can you bring the SQR–18A up to be an SQQ–89? People would like us to do that. If you do that, then the price goes up. From $9.5 million, which is the price now; and it still won't have the same capabilities. So if you want to throw money at a problem, we could probably, for the short term, bring the SQR–18 system up to match an SQQ–89 system. But what have you done? You have taken a 1986 Cadillac and you have put a 1976 Cadillac engine in it. If you install a modern engine and a new air-conditioning system you still have that 1976 Cadillac. You still have the old system if you try to improve SQR–18 to bring it up to the SQQ–89.

So the real issue is we have got twice the capability. It costs twice as much, but I contend that against the threat, it is the SQQ–89, sir, that will get the submarines and the SRQ–18 won't.

Mr. **Hunter**. Could I ask, Admiral, you say you could bring the SQR–18 up to SQQ–89 standards by spending a certain amount of money on it. You could upgrade it?

Admiral **Metcalf**. No, you couldn't bring it up, you could get close.

Mr. **Hunter**. What would that cost to get it up?

Admiral **Metcalf**. You can get a brochure on that any time but I might estimate, knowing what it requires to bring the SQQ–89 system up, it would be somewhere near the same amount of money. So they would both be within the same ballpark of total cost. We couldn't do that right now.

Mr. **Hunter**. They would be paying the same amount of money?

Admiral **Metcalf**. You would be paying less for the SQR–18 system but you would be getting a lot less capability and you would be putting money into a maverick system.

Mr. **Hunter**. I understand that. What I am saying, if you upgraded the SQR–18 to approximately the SQQ–89 capability, not quite the SQQ–89 caliber but somewhere in that ballpark, you are saying you would end up paying——

Admiral **Metcalf**. In my judgment.

Mr. **Hunter**. Approximately $20 million overall anyway?

Admiral **Metcalf**. In my judgment it would be somewhere near that. People will argue with you on that point. My judgment, having watched how we develop systems over the years, when you got through that is what you would have. Furthermore, you would have active ships with the one system and the reserves with another system and the cost associated with that, logistic costs, people training costs, all the rest of it.

So my contention is that, if we put that system on the reserves frigates, it is going to cost a heck of a lot more than just the procurement costs, the tail costs, and the training costs. I want to train all sailors, whether they are active sailors or reserve sailors, on the same equipment.

The SQQ-89 happens to be the better of the two, also. We also have got the SQQ-89 in hand today. We do not have an updated version of the SQR-18(V2). It would have to be something we would have to work on. I don't want to spend my R&D money to do that. It just doesn't make sense any more than it makes sense to put a system on a frontline ship which can't find submarines in the 21st century.

Mr. **Bennett**. Assuming these Congressmen that approached us in the letter about this matter are primarily interested in getting reserve ships in good shape, would the same amount of money that was involved—$15 or $20 million, whatever it is—would that amount of money buy more in the same timeframe if you went with the SQQ-89 than the SQR-18?

At least some of the people obviously are not parochially interested. There could be one or two of them that might be, I don't know. If they were I guess their companies could compete with other companies to get the SQQ-89. That is a competitive thing.

Admiral **Metcalf**. That is right, particularly the SQR-19 tail, which goes with the competitive program.

Mr. **Bennett**. It hasn't been let.

Admiral **Metcalf**. It is in competition right now.

Mr. **Bennett**. So they could compete if they wanted to.

Admiral **Metcalf**. If they wanted to. I don't think they have chosen to do it, however.

Mr. **Bennett**. The question I started off to ask was, assuming that their motive was primarily to see that the reservists get the maximum ability and the cheapest in the shortest period of time—those elements of cost, time, and ability—do they resolve themselves against their plea or do they resolve themselves for the SQQ-89?

What I am trying to say, maybe there is a need for us to add additional funds for the SQQ-89 to come across quicker, say in 1987. In 1987 we could get some of the SQQ-89s at a quicker time and solve some of the requests at least coming from these Congressmen.

Admiral **Metcalf**. You couldn't get them actually on the ships any faster than we have talked about.

Mr. **Bennett**. Which could get on faster?

Admiral **Metcalf**. They both would get there about the same time, which is 1988, no matter what you do. The issue becomes systems, and I understand the reservations of Congressmen who are looking into the past as to how the Navy has equipped our reserve ships. That is the nub of the question. They have reservations about it. If I were in their position, I would have the same reservations.

Mr. **Bennett**. They feel they have not properly done by the reserve ships.

Admiral **Metcalf**. That is a feeling.

Mr. **Bennett**. So they wanted to get this SQR-18 because they thought they could complete it quicker.

Admiral **Metcalf**. They thought because it was cheaper that the Navy would support it. Now, we cannot support a system which we see won't do the job. I just can't do that. I cannot do that in good conscience. I know it costs more money. I know there may be fewer active and reserve ships. We may modernize that force at a slower rate. I will accept that. The Navy will accept the slower rate.

Mr. Bennett. Congress doesn't necessarily have to do it. We can add it.

Admiral Metcalf. From my perspective I am saying that it is better to have a system which will find submarines than one which will not find submarines. Now, I am talking about the submarines which you know my sons and daughters will confront because these FFG-7's are going to be around in the 21st century. The SQR-(V2) will find Charlie/Victor kinds of submarines. In other words, I speak of the second and early third generation submarines. They will be with us for a while. So it is acceptable to put them on the 1052 because they will be around the same time as these submarines.

We are looking ahead. We have had a terrible tendency to shoot behind the rabbit. I am trying to get out ahead. I know I am not going to get these on reserve ships until 1988. I accept that. I know that we will not be able to get them at the same rate than if we were going to build the $9.5 million system. I accept that. But it is absolutely imperative that we have a mirror image of our active force in our reserve force.

That to me is what the Congress has been telling us for years. The committees of Congress, this committee, and other committees, who have been interested in this problem, have been telling the active Navy we want you to modernize reserve ships. This I want to do. I want to do it with exactly the same equipment that I am putting on the active ships. That is what is behind this issue. I understand the cost differential. It is a tough problem.

Mr. Bennett. We might consider putting more money in.

Admiral Metcalf. You know how I have to stand on that.

Mr. Bennett. Yes, that is correct, I understand that. I am not quarreling with that, but we are not talking about a lot of money, and so you might think about adding some money to getting it quicker for the reserves. That won't take care of a parochial interest. That is not the fault of Congress if the opportunity is here for them to bid.

Are you through?

Admiral Metcalf. Yes sir.

Prepared Statement of Vice Adm. Joseph Metcalf III

Our Naval Surface Forces face a formidable challenge in the form of the Soviet Submarine Force which has demonstrated, and continues to demonstrate, significant quieting, new weapons and new sensors. It is imperative that we respond to this challenge by developing and fielding systems which allow us to maintain our anti-submarine warfare capability against this rapidly evolving threat. The AN/SQQ-89 ASW Combat System has demonstrated this capability during testing and actual fleet operations.

This system which includes the AN/SQR-19 Tactical Towed Array Sonar is being procured to equip our modern surface combatants: DD 963 destroyers, FFG 7 Class frigates, CG 47 cruisers and DDG 51 guided missile destroyers. FFG 7 Class frigates assigned to the Naval Reserve Force (NRF) were not originally included in this market. Our precious perceptions of the threat indicated that the SQR-18A(V) 2 TACTAS, which is based upon an earlier (previously developed) predecessor system, the AN/SQR-18,, would provide sufficient capability for these ships. However, recent threat information and the operational success achieved with the AN/SQQ-89 system have prompted the Navy to revisit the decision as to what ASW upgrades to provide the NRF FFG 7's.

In view of the threat situation and the recently demonstrated capabilities of the SQQ-89 ASW Combat System, the Navy expanded the policy of ensuring that Naval Reserve Force ships mirror their active counterparts by selecting the AN/SQQ-89 for installation aboard the NRF FFG 7's. Our Naval Reserve Force FFG 7 frigates will perform the same wartime mission against the same threat as active fleet units. The advanced nature of the threat allows the Navy no option other than equipping all of its modern frigate force, including those 18 of the 51 FFG 7 Class ships which will be assigned to the Naval Reserve Force, with the most modern and capable ASW combat system available.

The variant of the AN/SQQ-89 ASW Combat System configured for FFG 7 Class ships differs from variants which are being installed on high mix cruisers and destroyers but still offers the benefit of increased capability against the modern threat, including improved detection ranges, multiple contact management capability and the Navy standard building block systems architecture which are characterics of this system. NRF FFG 7's will be equipped to support the LAMPS MK I Upgrade helicopter (improved engines, onboard acoustic processor, TACNAV data link and 99 channel sonobuoy receiver) and will also be fully interoperable with the LAMPS MK III helicopter.

While the AN/SQR-18A(V)2 remains a viable system for the older FF 1052 Class Frigate with its shorter remaining service life, the AN/SQQ-89 is the ASW Combat System required for NRF FFG 7 Class ships which will confront significant numbers of the modern threat into the 1990's and beyond. Within the constraints of affordabilty, the Navy has selected a course of action which gives each unit of the Naval Reserve Frigate Force a warfighting capability which will not fall into obsolescence during the service life of the platform.

Mr. **BENNETT**. Anyone want to ask some questions?

I think I have asked my questions.

Mr. Chappell has submitted a statement I have not yet read. Without objection, it will be put into the record here.

PREPARED STATEMENT OF HON. WILLIAM CHAPPELL, CHAIRMAN, SUBCOMMITTEE ON DEFENSE, HOUSE APPROPRIATIONS COMMITTEE

Mr. Chairman, distinguished members of the Committee, it is a privilege for me to testify before your Committee today in my capacity as Chairman of the House Appropriations' Subcommittee on Defense.

The subject of this hearing—the current and future Anti-Submarine Warfare (ASW) capability of the Naval Reserve Force frigates is a subject near and dear to my heart, particularly since I was one of those in the forefront of the effort to modernize the Naval Reserve fleet with these ships. Additionally, this subject surfaces at an opportune time since both of our Committees are currently in the process of reviewing the Department of Defense's Fiscal Year 1987 Budget. You know, Mr. Chairman, as well as I, that there will definitely be reductions made to this year's Department of Defense's budget request, and, of course, the reductions made this year will obviously impact outyear budgets.

Mr. Chairman, the current "LOW-MIX" ASW option—the SQR-18 (V2)/SQR-17A, which both the late Joseph P. Addabbo and I have been supporting provides a cost-effective and timely approach to improving the Naval Reserves' ASW capability. We are currently using both SQR-17's and SQR-17A's to prosecute targets in the fleet, on our DD-963's and FFG's, with and without the SQR-18 system. I believe this "LOW-MIX" option provides a front line, urgently required LAMPS MARK-I ASW capability to the fleet that is needed now to counter the Soviet submarine threat. In particular, the SQR-17A shipboard processor is an essential element of the Navy's LAMPS MARK-I ASW capability and responds to a stated requirement. The SQR-17A provides the Navy with the essential capability of shipboard processing of signals from aircraft or ship deployed sonobuoys (DIFAR/DICASS). Without the SQR-17A, the capability of the Navy's newest aircraft sonobuoy systems are so reduced as to remove the very capability which provided the rationale for its introduction into the fleet. Further, the SQR-17A is capable of full mission performance with or without the LAMPS MARK-I ASW helicopter and AN/SQR-18 system and has been viewed safer by representatives from Navy laboratories and fleet operators. When compared to newer systems such as the "HI-MIX" SQR-19/SQQ-28 system, the upgraded "LOW-MIX" processors are a less costly option that can be deployed in a relatively short period of time. Additionally, the SQR -17A consumes less ship space and weighs considerably less than the "HI-MIX" system. Thus, I contend that the "LOW-MIX" option is an excellent alternative that can be deployed in the fleet immediately.

Although nearly 145 SQR-17A processors are required to satisfy the ASW requirements of ships in the Active and Reserve fleets, Coast Guard cutters, and Land Based Training sites, the Navy is proposing to cancel future acquisitions of this "LOW-MIX" option and satisfy fleet requirements with the 77 SQR-17A systems that have been required through fiscal year 1986.

Acquisition managers in the Naval Sea Systems Command are currently planning to acquire additional SQR-19/SQQ-28 systems, or an ali "HI-MIX" option, to satisfy all fleet requirements for ASW systems including the Reserve forces. Recent Secretary of the Navy guidance, which has not been approved by the Office of the Secretary of Defense, proposes that 18 FFG Class 7 ships assigned to the Naval Reserve force should not receive the SQR-17A system. Rather, these ships should await delivery and subsequent installation of the "HI-MIX" system which most probably would occur in the mid to late 1990's. I believe this will leave these ships with an unacceptable ASW detection and classification capability until the "HI-MIX" option can be installed. Since the current "HI-MIX" acquisition plan, also requires installation concurrent with the ships overhaul, installation could be delayed 10 to 15 years. The "HI-MIX" option on the surface sounds like a viable procurement strategy, but one only has to look back several years to remember how the Reserve forces have been treated when it comes to receiving modern equipment.

Mr. Chairman, there are currently destroyers and frigates in the fleet with older SQR-17 acoustic processors that cannot process our new sonobuoys. These ships are currently awaiting the "HI-MIX" system. Additionally, there are quite a number of CG-47 AEGIS Cruisers and FFG-7 frigates also awaiting installation of the "HI-MIX" ASW system. There have been over 40 systems procured to date with only 2 systems currently operational today. I have asked myself the question, what ships will receive the new "HI-MIX" system when they are delivered, and based upon past experience, the answer to that question is the Active forces.

There has been some consideration given to providing the Reserves with a few "HI-MIX" systems in the near term. But what happens two years from now when these systems are delivered and the decision-makers of today have retired or been reassigned? Again, based upon past experience, once delivered those new "HI-MIX" systems will not go to the Reserves. I have proposed modernizing the Reserve forces with a system that is not quite as capable as the proposed "HI-MIX" option, but it does provide the Reserve forces with an interim ASW capability that is cost-effective and timely.

I should also point out that the Navy's plan to cease SQR-17A procurements appears at this point to neglect the Coast Guard requirement to equip 13 medium endurance cutters (WMEC's) with these capable ASW sensors. The Coast Guard's WMEC's have a critical wartime function that includes Anti-Submarine Warfare. Currently Coast Guard operations are conducted around the world in support of U.S. transportation interests. During contingencies, Coast Guard ships would operate as an integral asset of our Naval forces. To ensure that these ships are ASW capable additional SQR-17A systems are necessary. In addition to providing an ASW sensor suite the "LOW-MIX" option also assists the Navy's efforts to provide a lost cost weapons system that satisfies most of the current threat targets.

This is very important, Mr. Chairman. As you know, the current review of the Department of Defense budget continues to be intense and ultimately planned system acquisitions will be deferred and budget priorities reassessed. My proposal provides the Navy with an opportunity to acquire a "LOW-MIX" option to satisfy fleet ASW needs. Although the "HI-MIX" option provides an excellent system, it is very costly and can only be installed during ship overhaul periods. Budget reduction initiatives may slow the current "HI-MIX" acquisitions and extend current ship overhaul plans. The combined affect of these actions may significantly impact the fleet's ASW readiness. The significance and growth of the Soviet submarine force demands that all U.S. naval combatants possess a capable ASW system to support fleet operations. Further, where this capability is not available, the Navy should install systems such as the low cost option I have proposed. This would ensure fleet readiness today.

I continue to maintain my belief that the "LOW-MIX" option should be directed to all Naval Reserve forces. I thank you for the opportunity to testify on this subject, and if you have any questions, I would be happy to answer them.

Mr. Schafer. Might it be appropriate to raise a couple of questions?

Mr. Bennett. Yes.

Mr. **Schafer**. In the statement that he has inserted in the record, Mr. Chappell raised a couple of questions he asked Admiral Metcalf to address. First, he asserts that while Navy has put out guidance providing for putting the SQQ-89 improved system on all reserve frigates, it says that has not been approved by the Secretary of Defense. Is that correct?

Admiral **Metcalf**. It has been approved by the Secretary of the Navy. I believe it is in this year's POM, which the Secretary of Defense is working on right now. So we are looking at timing and I see no reason why the Secretary of Defense would have problems. So, it is in the POM and the Secretary of Defense is currently reviewing the POM.

Mr. **Schafer**. So there is no significant issue within the Navy or the Department of Defense about the assertion that the threat is getting better and that this system, the newer system, is a substantially better system vis-a-vis the threat?

Admiral **Metcalf**. I would say the threat was getting more difficult rather than better, but there is no substantial disagreement either with the statement of the threat or what we are trying to do.

Mr. **Schafer**. Second, it is asserted that by moving to putting the better system on, the more expensive system on, in effect these naval reserve frigates will end up without any capability until the mid to late nineties.

Admiral **Metcalf**. They will have the same capability as the active FFG-7's have in exactly the same ratio. You could make that statement for the active side. That is a catch-22.

Does that answer your question?

Mr. **Schafer**. Well, some, yes. Is it possible that by shifting to a more expensive system that it will delay the installation?

Admiral **Metcalf**. On both sides, both the active and reserve sides.

Mr. **Schafer**. So then it goes back to your statement you view that as being preferable to having fewer, more capable?

Admiral **Metcalf**. That is right, clearly preferable, and priorities change, times change. If we find ourselves—we are on the edge of classified material, I think I had better stop.

Mr. **Schafer**. Those are all the questions I have.

Mr. **Bennett**. Any questions anybody wants to ask?

Mr. **Spence**. Mr. Chairman, admiral, I don't know if we can get into the difference in the capability of the two systems in open session or not, but there is a marked difference, is that right?

Admiral **Metcalf**. Yes; let me put it this way. Let me stretch this a little bit from here on Capital Hill. If you had an SRQ-18 against a modern Soviet submarine, and you had an SQQ-89 system against the same submarine, you could find the target [deleted]. That is against the best the Soviets are building right now. There are other comparisons we can make. That is the worst. I acknowledge I have just emphasized the very best part of the comparison.

Mr. **Spence**. No further questions.

Mr. **Bennett**. All right, we will address this in a later part of the hearing and that will be all we will have on this aspect. We will now go to another issue. We appreciate very much your having come.

There is another subject the subcommittee needs to understand more about, that is the options available for using Poseidon submarines retired for SALT purposes. All of you will recall that as a part of last year's Defense Authorization Act, Mr. Hunter, a member of the subcommittee, offered a floor amendment requiring a report from the Secretary of Defense on the feasibility of using these submarines in alternative ways. Unfortunately, the report, marked "confidential," says that because the President is still studying the options, the administration cannot provide the kinds of basic information this subcommittee needs to carry out its oversight role and make informed decisions on these matters.

I wrote an op-ed article, which appeared in the Christian Science Monitor, outlining what I thought the President should do regarding these submarines and compliance with the SALT II agreement. Among the issues the report leaves open are the clear statements of the options for using these submarines, including attack and cruise missile roles, and as training platforms.

Next, the feasibility of each option, the cost of each option, and the expected remaining lifetime of the ships under each option. Some information I received indicates that even after an extensive overhaul these ships might have only 6 to 10 years life remaining. That is just informal information. It doesn't come directly from the Department.

Yet, other service life extensions, like those being given to the aircraft carriers, will extend the lives of these ships for more than 15 years. So we need to know why the life of these submarines cannot be extended just as the life of carriers for 15 years rather than 6 to 10.

I wrote the Secretary of the Navy, Secretary Lehman, and expressed my interest in the sum of these possibilities and told him that we need more information and I recently received a reply which is confidential. The letter itself is not confidential. The enclosed report is confidential. The letter reads:

> Thank you for your letter and the accompanying op-ed piece concerning the feasibility of converting Poseidon SSBNs to cruise missile submarines as an alternative way to comply with the SALT II Treaty. Since your letter, Secretary Weinberger has sent a report to Congress on the feasibility of converting Poseidon submarines to cruise missile carriers, as well as using them for training platforms.

He concludes that:

> Conversely it is technically feasible, but any further comment on further application of the Poseidon class submarines would not be appropriate until the President completes his review of options in response to the Soviet violations of arms limitations agreement.
>
> Of course, the President recently decided to dismantle two Poseidon submarines to stay within SALT II limitations because of the start of sea trials for the newest Trident submarine, the U.S.S. *Nevada*. This is only one aspect of the total SALT II compliance issue.
>
> I am enclosing Secretary Weinberger's report for your convenience, which is a one page, not very detailed report.
>
> In light of Secretary Weinberger's position on a hearing on this subject, it seems inopportune. If I can be of further assistance, let me know.

Well, although Secretary Lehman feels that having a hearing at this time might be inopportune, I am concerned about the matter.

It seems to me that it overlooks the fact that the Constitution says the Congress shall provide for our national defense needs and the President should have at least consulted Congress about this issue of what to do with these submarines.

Members of this committee, the Seapower Committee, are involved in this kind of decision, and it is under the Constitution the Federal responsibility is left basically in the hands of Congress. I seek to advise the subcommittee on this issue as I would like to come to grips with it, and I would think the administration would be eager to explain to the subcommittee the pros and cons of this dismantling or overhauling these submarines and not require us to wait until the last minute when maybe we have other circumstances that make it more difficult. We might not have time; we might not be in session.

Once again, the Constitution delegated to the Congress the responsibility for providing for national defense and this subcommittee is responsible for naval shipbuilding. I would like to get a feeling of how the members of the subcommittee feel about holding a hearing on what we should do with these submarines. The awkwardness is that most of the technical knowledge, of course, is in the hands of the Navy, and we may have a very awkward situation of trying to find people who are knowledgeable in this matter who are outside the control of the Department of Defense.

I would hope we could get Defense witnesses, but I am not sure, in view of the Secretary's letter. It seems to me we could use information on this subject and possibly needs could be fulfilled. The Russians do something similar when they change from a prohibited type of submarine to another type, they usually do something about it. They don't throw away the hull.

I would like to know how the members of the committee feel about this because I am concerned. I am concerned about the fact we might be too late in being able to make a decision appropriately.

I don't want to have an unnecessary clash with the administration, but I do feel awkward about it. I feel a little like I do about the 600-ship Navy. People are always saying do we need a 600-ship Navy or don't we? We have had hearings almost every year on this subject. We had a very exhaustive hearing on the matter last year. I wanted to make sure this committee was not running away from its responsibilities and I feel sort of similarly with regard to this issue. I don't think it is something we should run away from. It is something here on our table and I want to do it as gracefully as I can, if we do something, but I do like to get the counsel of the committee on this matter.

Mr. Hunter was here a moment ago. Is he coming back?

Mr. **Schafer**. He indicated he would be back.

Mr. **Bennett**. He took a leadership position last year in getting a provision added to the bill which said specifically that the administration would report to us, and the report is classified. It is just a letter, a 1-page letter; it doesn't really give very many details, doesn't give us many facts about dollars, or timing, or things of that type.

Various things could be done with these submarines. You could make them into cruise-missile-carrying-type submarines carrying missiles, or could use them as attack submarines, or a number of things could be done, and I am not sure whether they are cost effective or whether it makes sense, in view of their short remaining life. I am not convinced they have all that short a life. I have heard the time said to be 6 years. Since we do add another 15 years for carriers, I would like to discuss that. It doesn't necessarily have to be discussed in public hearings. I am asking the committee now to give me their counsel, if they will, about what they feel we ought to do with this.

Maybe you would like to postpone it. We are gnashing our teeth in public about this matter, but I have felt we ought to come to grips with it for some time, and absent somebody feeling to the contrary, I think we probably should set a hearing date with enough time so we will have an opportunity for the Department to see what witnesses they could send. We could have it in executive session, if that worries them, but I don't know how we can brush off our responsibility.

The President does have responsibility with regard to the SALT Treaty. That is not something this committee has anything to do with directly, but we do have the question of whether or not we are throwing away assets when we don't utilize these hulls. Would anybody like to make any observations about it?

Mr. SPENCE. Mr. Chairman, I think—of course you have seen the letter—it is technically feasible. I am like you, I don't know about the cost-effectiveness part of it, and those kinds of things, what other plans they might have for cruise-missile-carrying-type submarines, to make it not cost effective. In any event, it wouldn't do any harm to have a hearing and go ahead.

Mr. BENNETT. All right. What I could do then, unless somebody else has an observation, what I could do is I could draft a letter in response to the Secretary of the Navy's letter, and urge that he reconsider the matter and tell him we are going to have some kind of hearing on the best kind of evidence we could get. We would like to get it from the Navy and make it graceful, and try not to be awkward about it.

I feel like you do, we can hardly escape our responsibilities. We have hundreds of millions of dollars in these hulls. This isn't going to be the last time this is going to occur. There may be other times. So in the absence of any objection, that is what we will do.

I am not going to continue to make paragraphs and conversations here waiting until Mr. Hunter comes back. He was the leader in bringing this before the Congress, and actually when I wrote my op-ed I really had overlooked the fact that we had a report coming in. I really should have paid tribute to him in the op-ed. But I was so deeply concerned by the fact that apparently the administration was going to just junk these hulls, that I just took pen in hand and wrote the op-ed.

And now the report has come in, I can say the report gives us no information that would be of any substance in coming to the conclusion whether this committee could thoughtfully decide to build new ships, or use these ships in a reconstructed manner, or whatever. It just is as bland a letter as the one from the Secretary of the Navy. It doesn't have much information, very few figures, very few points of real information.

So, absent any further discussion, we will adjourn and I will write such a letter and I will circulate it among the members of the subcommittee. Unless they have objection, we will send it out.

[Whereupon, at 10:45 a.m., the subcommittee was adjourned, subject to the call of the Chair.]

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